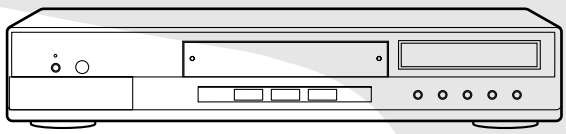
TOSHIBA

FILE NO. 810-200314

SERVICE MANUAL

HDD/DVD VIDEO RECORDER

RD-XS30SB



May, 2003 Ⓢ

LASER BEAM CAUTION LABEL

DANGER	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION	- RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	- AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	- SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	- SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
注 意	- 打开时有可见及不可见激光辐射。避免激光束照射。
注 意	- ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見たり、触れたりしないでください。 RQLS0233

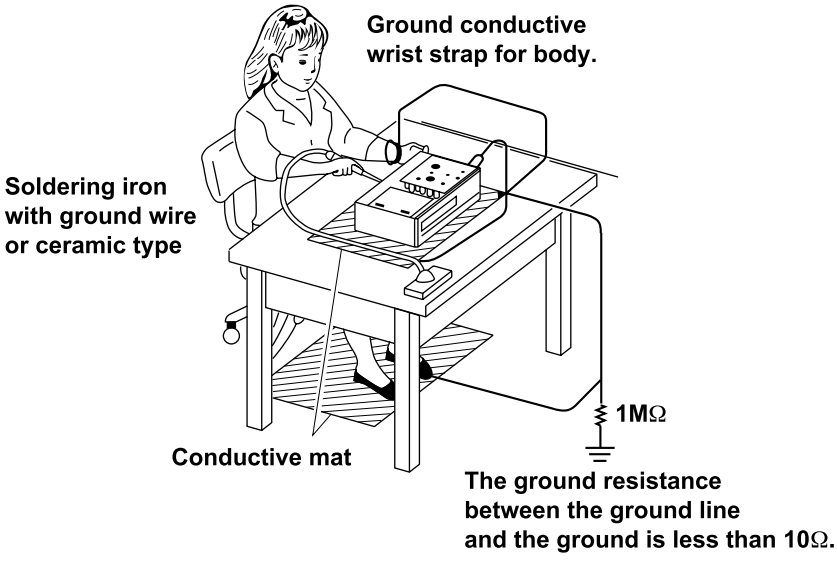
When the power supply is being turned on, you may not remove this laser beam caution label. If it removes, radiation of a laser may be received.

PREPARATION OF SERVICING

Pickup Head consists of a laser diode that is very susceptible to external static electricity.

Although it operates properly after replacement, if it was subject to electrostatic discharge during replacement, its life might be shortened. When replacing, use a conductive mat, soldering iron with ground wire, etc. to protect the laser diode from damage by static electricity.

And also, the LSI and IC are same as above.



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   2. Capacitor (Cap)
   3. Resistor (Res)
4. EXPLODED VIEWS
   4-1. Packing Assembly
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SECTION 1
GENERAL DESCRIPTIONS

1. OPERATING INSTRUCTIONS

Please refer to the owner's manual about the contents.

2. LOCATION OF MAIN PARTS

2-1. Location of Main Parts

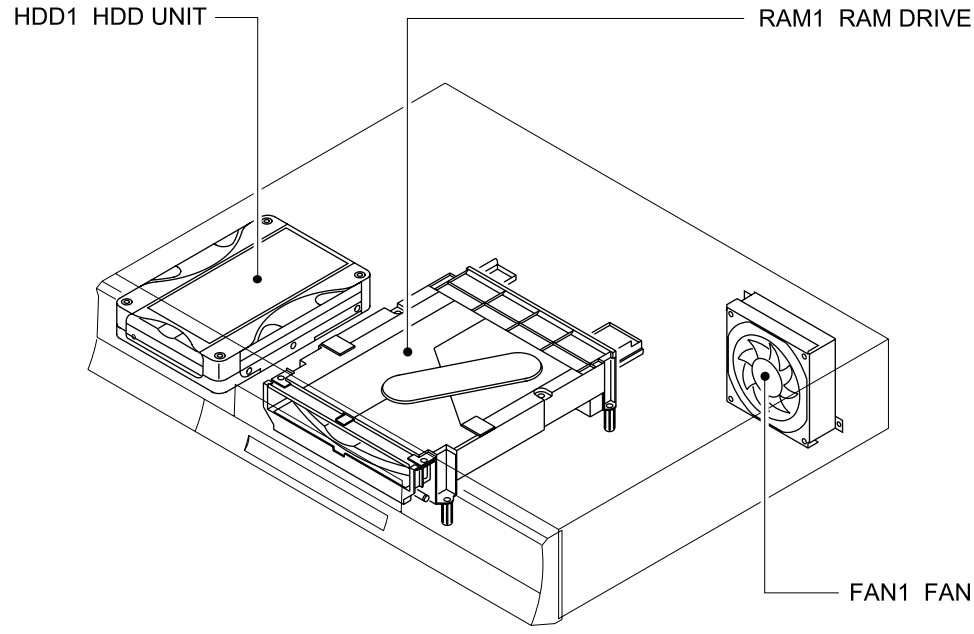


Fig. 1-2-1

2-2. Location of PC Boards

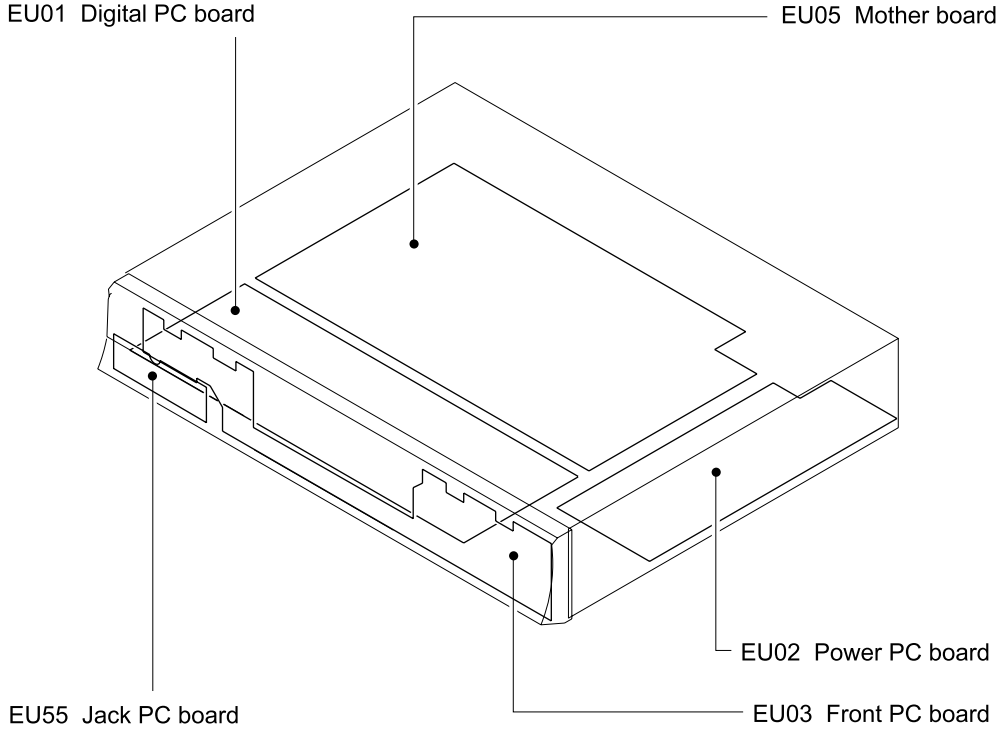


Fig. 1-2-2

SECTION 2
PART REPLACEMENT AND ADJUSTMENT PROCEDURES

CAUTIONS BEFORE STARTING PART REPLACEMENT

Electronic parts are susceptible to static electricity and may easily damaged, so do not forget to ground as required.

Many screws are used inside the unit. To prevent the screws from missing or dropping, etc. always use a magnetized screwdriver in servicing. Several kinds of screws are used and some of them need special cautions. That is, take care of the tapping screws securing molded parts and fine pitch screws used to secure metal parts. If they are used improperly, the screw holes will be easily damaged and the parts can not be fixed.

1. REPLACEMENT OF MECHANICAL PARTS

1-1. Cabinet Replacement

1-1-1. Top Cover

1. Remove seven screws (1), then remove the top cover (2).

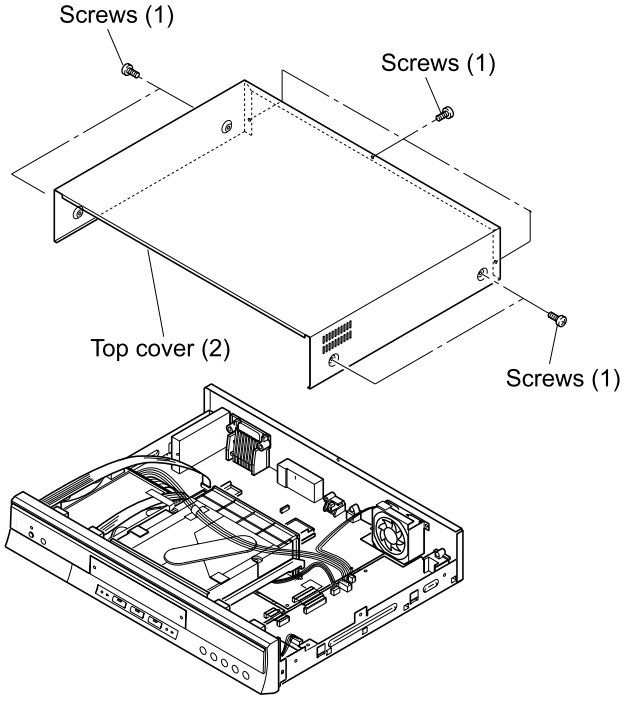


Fig. 2-1-1

1-1-2. HDD

1. Disconnect two flexible cables (1).
2. Disconnect a connector (2).
3. Remove four screws (3) and a connector (4), then remove the HDD (5).

Note:

- After replacing the HDD (5), make sure the connectors (2), (4) and the flexible cables (1) are connected securely.

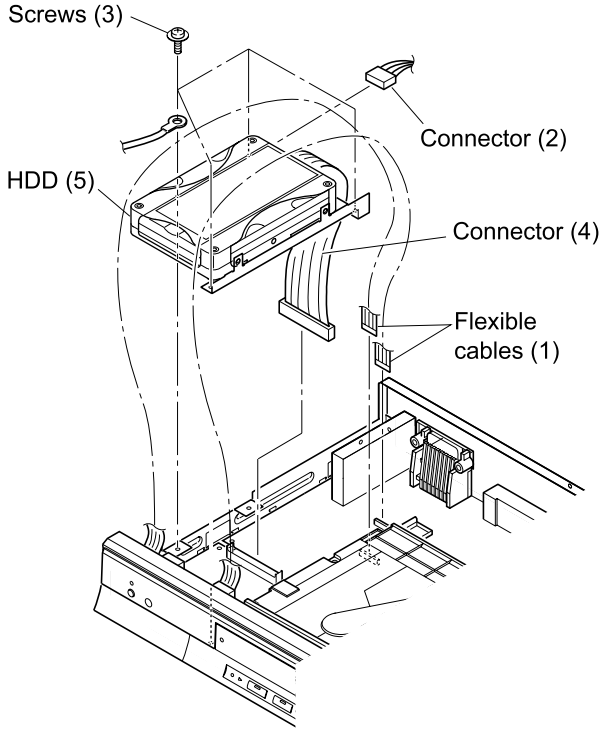


Fig. 2-1-2

1-1-3. Front Panel

1. Remove the top cover. (Refer to item 1-1-1.)
2. Remove the HDD. (Refer to item 1-1-2.)
3. Remove a connector (1).
4. Remove a screw (2).
5. Remove three screws (3).
6. Release five claws, then remove the front panel (4).

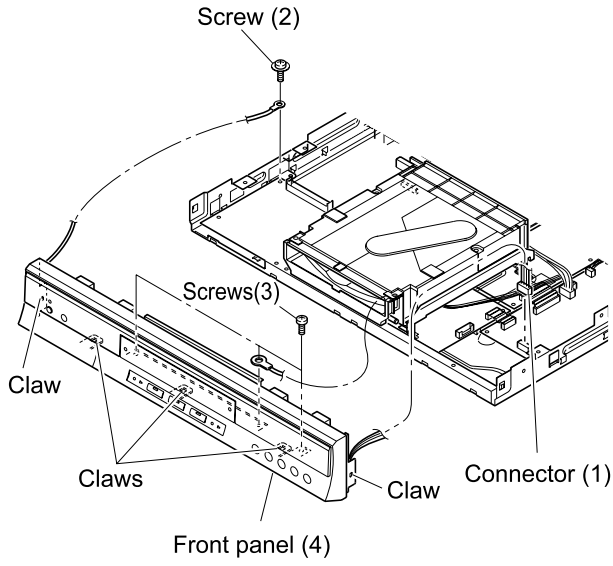


Fig. 2-1-3

1-1-4. Tray Door

1. Remove a spring (1).
2. Remove the tray door (2) while slightly bending it.

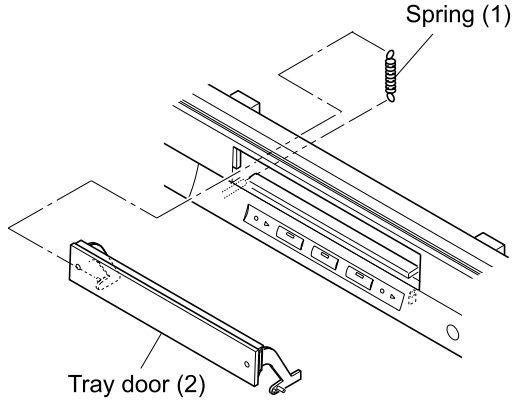


Fig. 2-1-4

1-1-5. Operation Panel Door

1. Open the operation panel door (1).
2. Release two claws and unhinge the door (1).

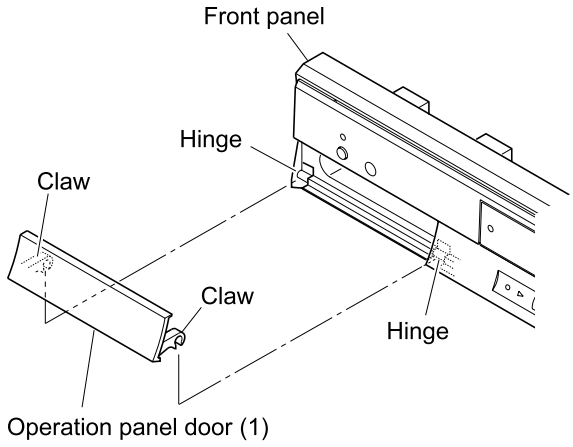


Fig. 2-1-5

1-1-6. RAM Drive

1. Remove the front panel. (Refer to item 1-1-3.)
2. Loosen the binding band (1) and disconnect a connector (2).
3. Peel off the tape (3) from the RAM drive (4).
4. Remove four screws (5).
5. Remove the flexible cable (6) by lifting up in the arrow direction (refer to Fig. A) and remove the RAM drive (4).

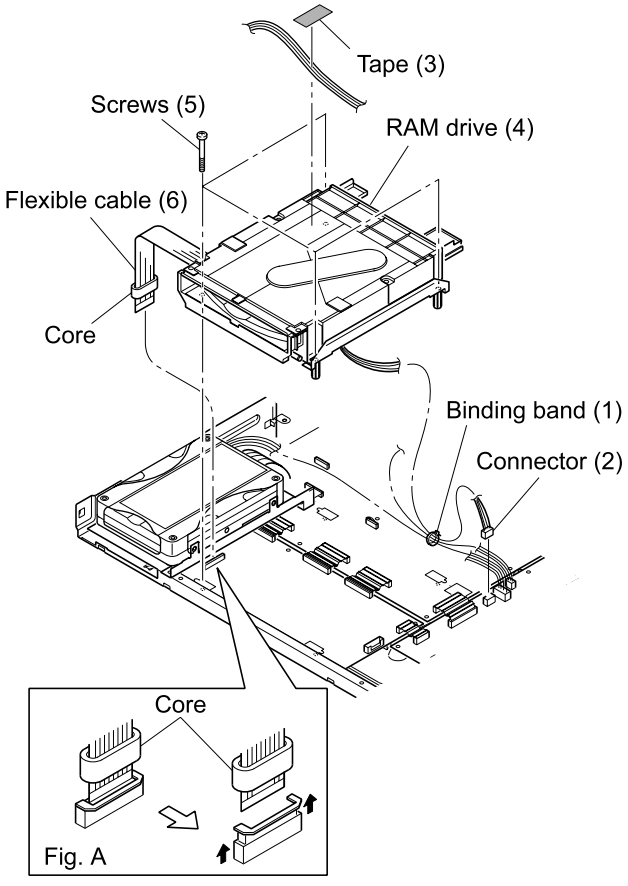


Fig. 2-1-6

1-1-7. Fan

1. Remove a connector (1), two screws (2) and the fan (3).

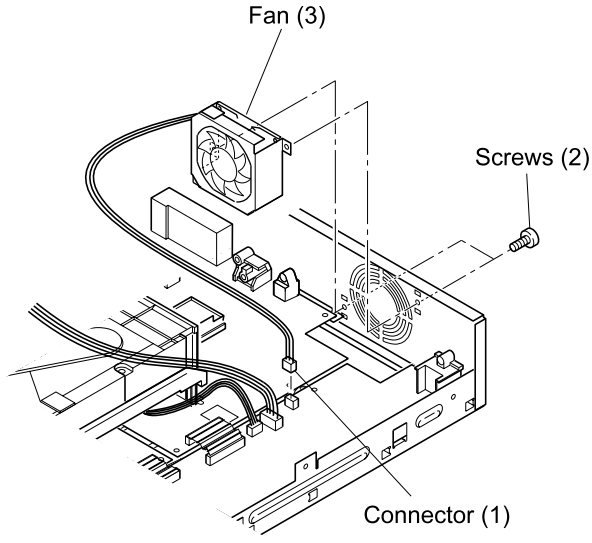


Fig. 2-1-7

1-1-8. Rear Panel

1. Remove eleven screws (1).
2. Loosen two claws and remove the rear panel (2).

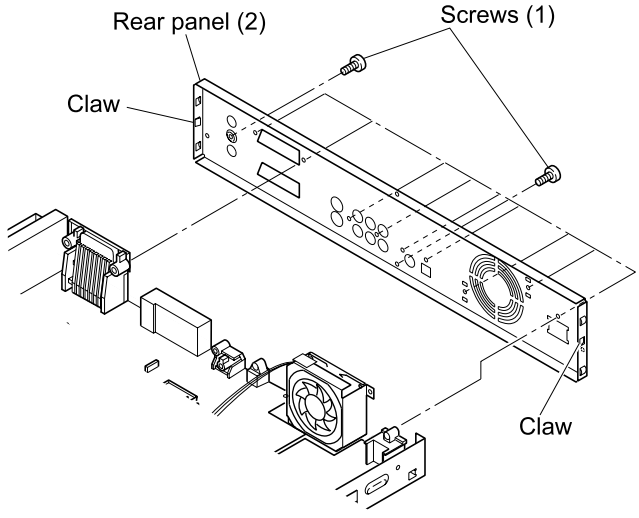


Fig. 2-1-8

1-2. PC Board Replacement

1-2-1. Digital PC Board

1. Remove the HDD. (Refer to 1-1-2.)
2. Remove the front panel. (Refer to 1-1-3.)
3. Remove the RAM drive. (Refer to 1-1-6.)
4. Remove a connector (1).
5. Remove three connectors (2).
6. Remove five screws (3) and the digital PC board (4).

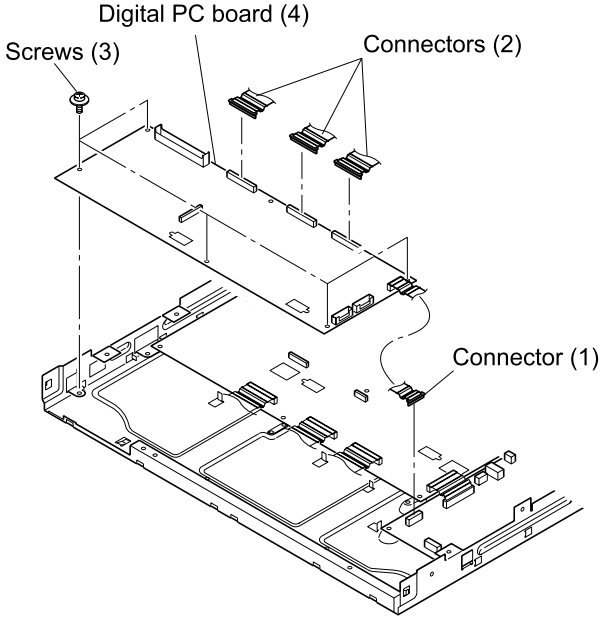


Fig. 2-1-9

1-2-2. Mother PC Board

1. Remove the HDD. (Refer to item 1-1-2.)
2. Remove the front panel. (Refer to item 1-1-3.)
3. Remove the RAM drive. (Refer to item 1-1-6.)
4. Remove the rear panel. (Refer to item 1-1-8.)
5. Remove four connectors (1).
6. Remove six screws (2), then remove the mother PC board (3).

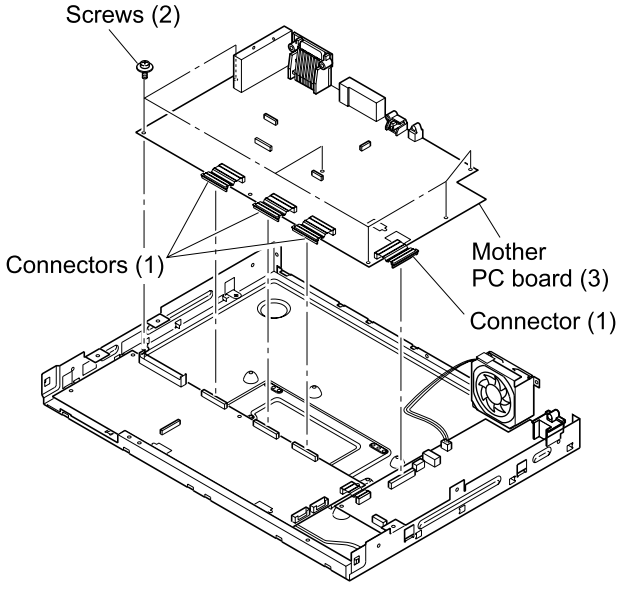


Fig. 2-1-10

1-2-3. Power PC Board

Cautions :

- **Danger of explosion if battery is incorrectly replaced.**
- **Replace only with the same or equivalent type.**

1. Disconnect four connectors (1).
2. Remove two connectors (2)
3. Remove a screw (3), four screws (4) and the power PC board (5).

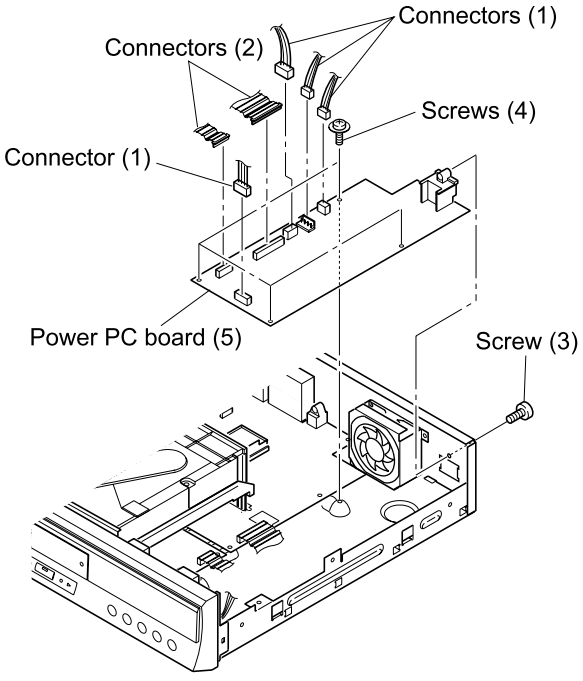


Fig. 2-1-11

1-2-4. Front and Jack PC Board

1. Remove the front panel. (Refer to item 1-1-3.)
2. Remove seven screws (1), then remove the stay (2).
3. Remove three screws (3), then remove the jack PC board (4).
4. Remove four screws (5), then remove the front PC board (6).

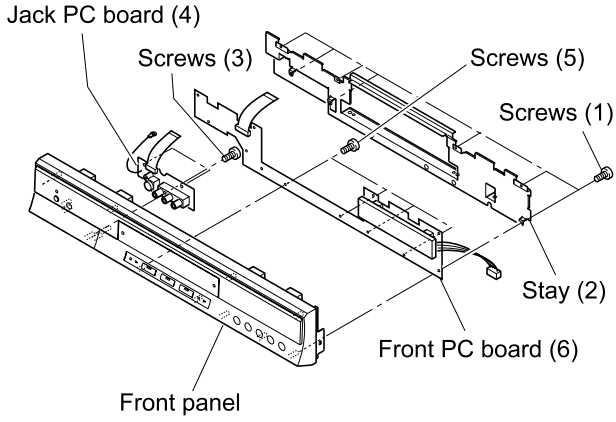


Fig. 2-1-12

SECTION 3
SERVICING DIAGRAMS

1. CIRCUIT SYMBOLS AND SUPPLEMENTARY EXPLANATION

1-1. Precautions for Part Replacement

- In the schematic diagram, parts marked ⚠ (ex. ⚠ F801) are critical part to meet the safety regulations, so always use the parts bearing specified part codes (SN) when replacing them.
- Using the parts other than those specified shall violate the regulations, and may cause troubles such as operation failures, fire etc.

1-2. Solid Resistor Indication

Unit	None ..... Ω K ..... kΩ M ..... MΩ
Tolerance	None ..... ±5% B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% K ..... ±10% M ..... ±20%
Rated Wattage	(1) Chip Parts None ..... 1/16W (2) Other Parts None ..... 1/6W Other than above, described in the Circuit Diagram.
Type	None ..... Carbon film S ..... Solid R ..... Oxide metal film M ..... Metal film W ..... Cement FR ..... Fusible

Eg. 1

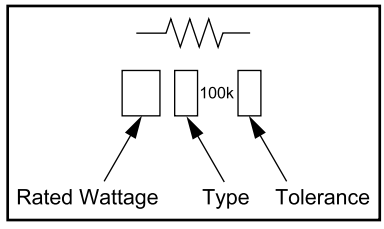


Fig. 3-1-1

1-3. Capacitance Indication

Symbol	..... Electrolytic, Special electrolytic NP ..... Non polarity electrolytic ..... Ceramic, plastic M ..... Film ..... Trimmer
Unit	None ..... F μ ..... μF p ..... pF
Rated voltage	None ..... 50V For other than 50V and electrolytic capacitors, described in the Circuit Diagram.
Tolerance	(1) Ceramic, plastic, and film capacitors of which capacitance are more than 10 pF. None ..... ±5% or more B ..... ±0.1% C ..... ±0.25% D ..... ±0.5% F ..... ±1% G ..... ±2% (2) Ceramic, plastic, and film capacitors of which capacitance are 10 pF or less. None ..... more than ±5 pF B ..... ±0.1 pF C ..... ±0.25 pF (3) Electrolytic, Trimmer Tolerance is not described.
Temperature characteristic (Ceramic capacitor)	None ..... SL For others, temperature characteristics are described. (For capacitors of 0.01 μF and no indications are described as F.)
Static electricity capacity (Ceramic capacitor)	Sometimes described with abbreviated letters as shown in Eg. 3.

Eg. 2

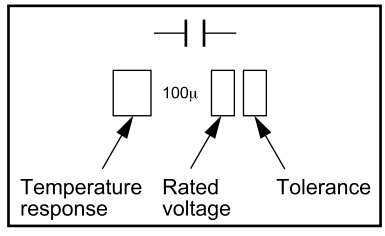


Fig. 3-1-2

Eg. 3

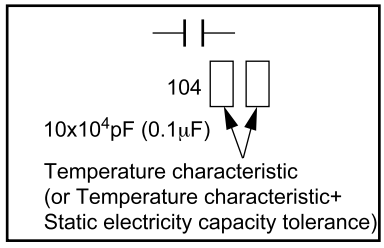


Fig. 3-1-3

1-4. Inductor Indication

Unit	None ..... H μ ..... μH m ..... mH
Tolerance	None .....±5% B .....±0.1% C .....±0.25% D .....±0.5% F .....±1% G .....±2% K .....±10% M .....±20%

Eg. 4

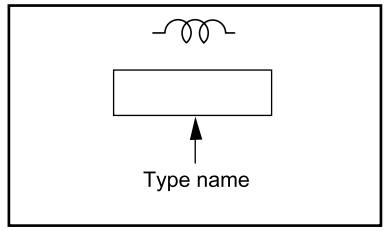


Fig. 3-1-4

1-5. Waveform and Voltage Measurement

- The waveforms for CD/DVD and RF shown in the circuit diagrams are obtained when a test disc is played back.
- All voltage values except the waveforms are expressed in DC and measured by a digital voltmeter.

Eg. 5

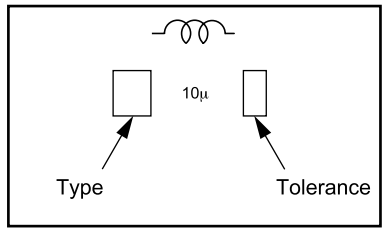
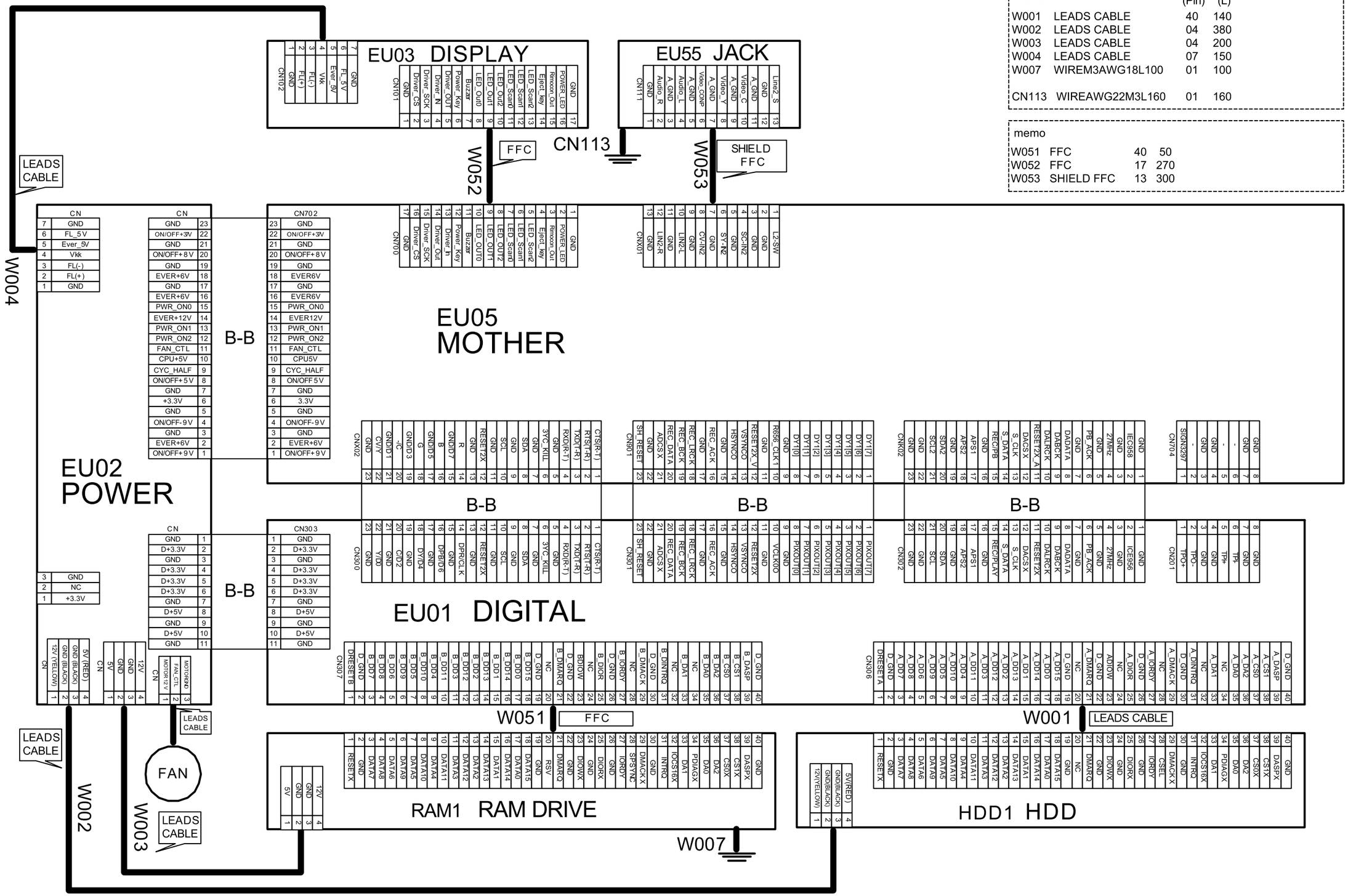


Fig. 3-1-5

1-6. Others

- The parts indicated with "NC" or "KETU" etc. are not used in the circuits of this model.

2. PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM



memo		(Pin)	(L)
W001	LEADS CABLE	40	140
W002	LEADS CABLE	04	380
W003	LEADS CABLE	04	200
W004	LEADS CABLE	07	150
W007	WIREM3AWG18L100	01	100
CN113	WIREAWG22M3L160	01	160

memo			
W051	FFC	40	50
W052	FFC	17	270
W053	SHIELD FFC	13	300

Fig. 3-2-1

3. BLOCK DIAGRAMS

3-1. Overall Block Diagram

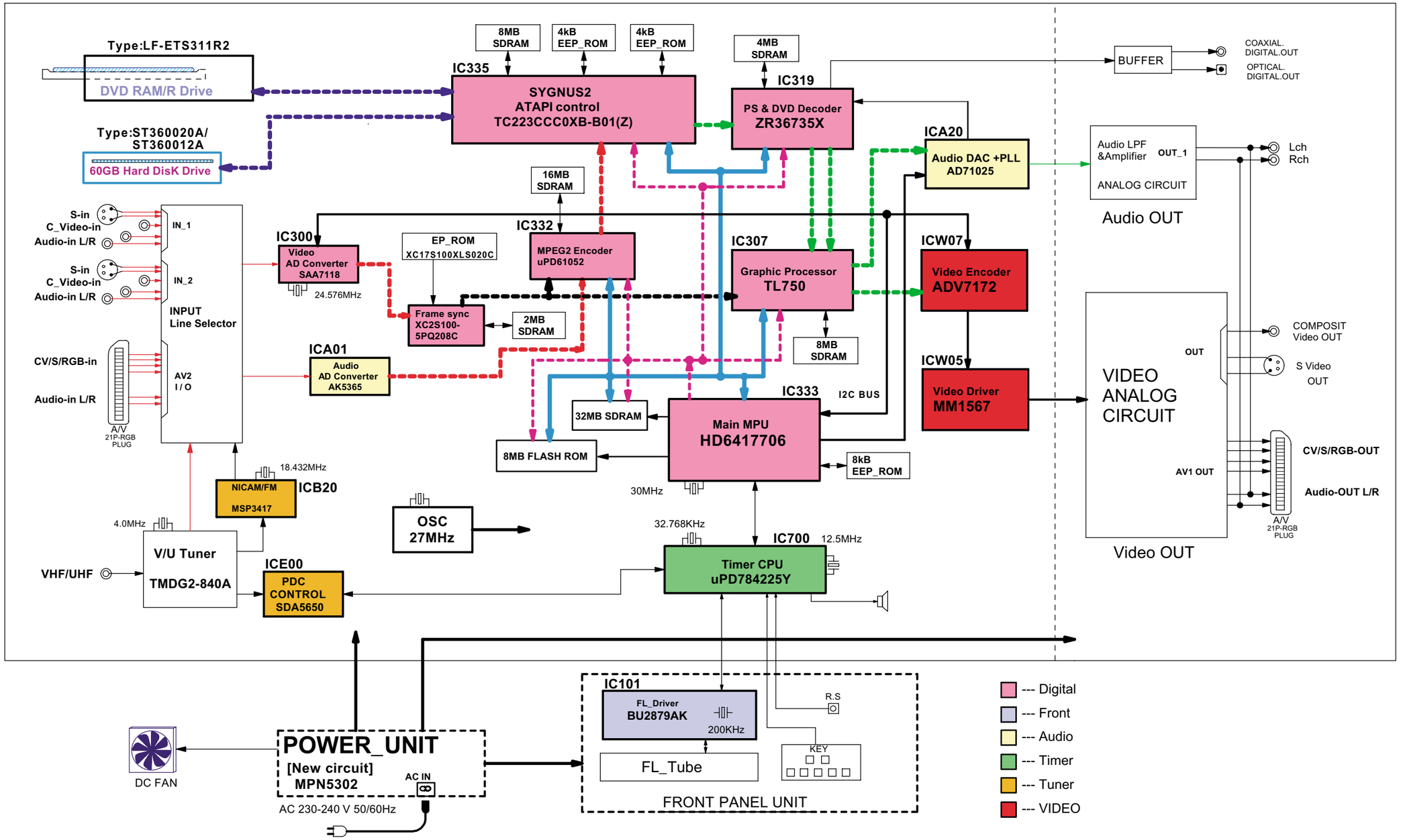


Fig. 3-3-1

4. CIRCUIT DIAGRAMS

4-1. Power Supply Circuit Diagram

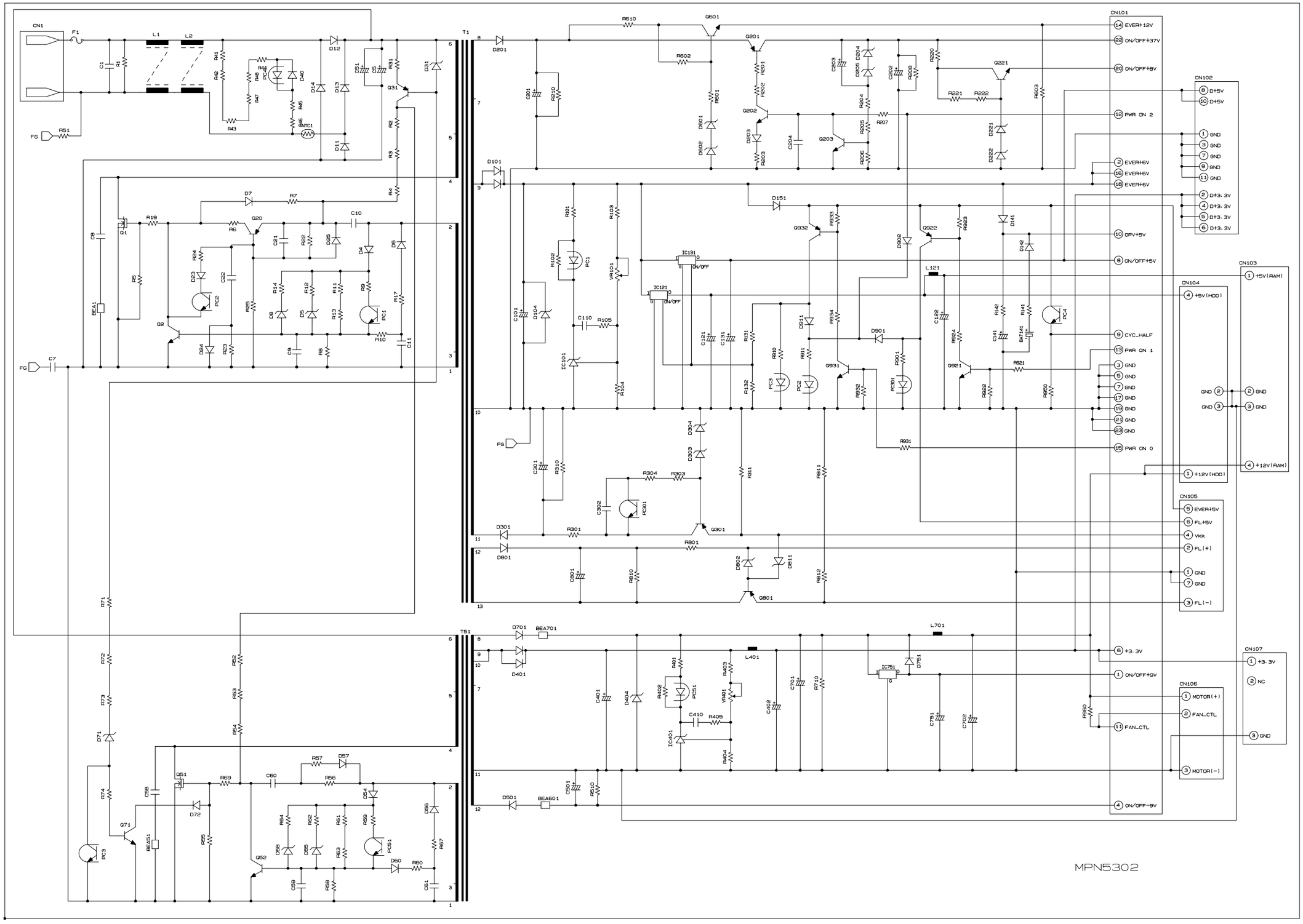


Fig. 3-4-1

4-2. Jack Circuit Diagram

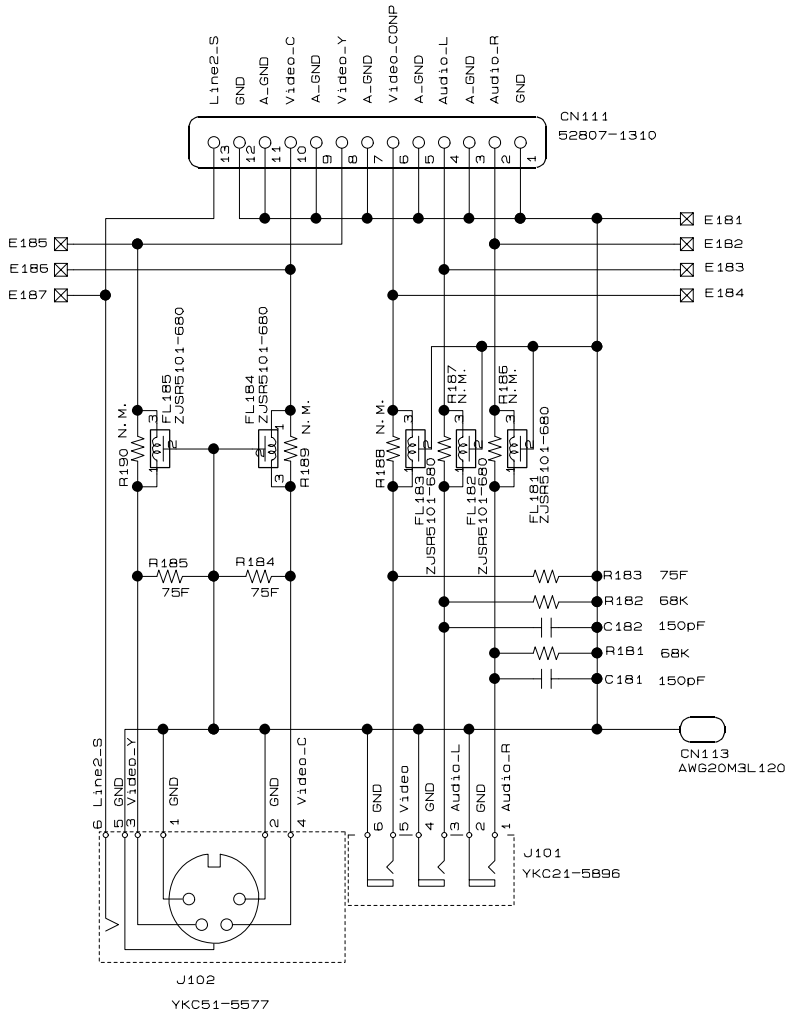


Fig. 3-4-2

4-3. Front Circuit Diagram

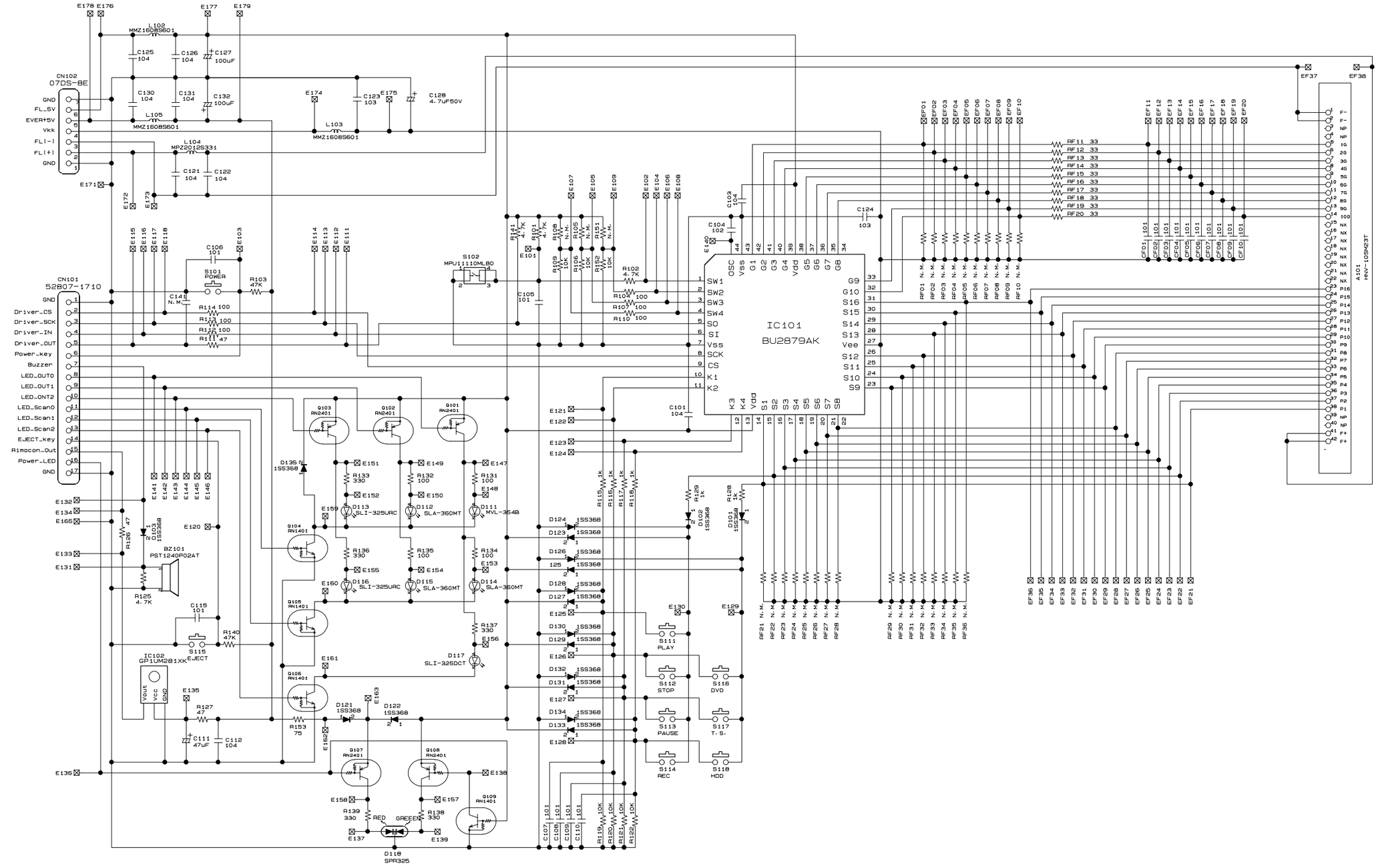


Fig. 3-4-3

4-4. Mother Circuit Diagram

4-4-1. Tuner Circuit Diagram

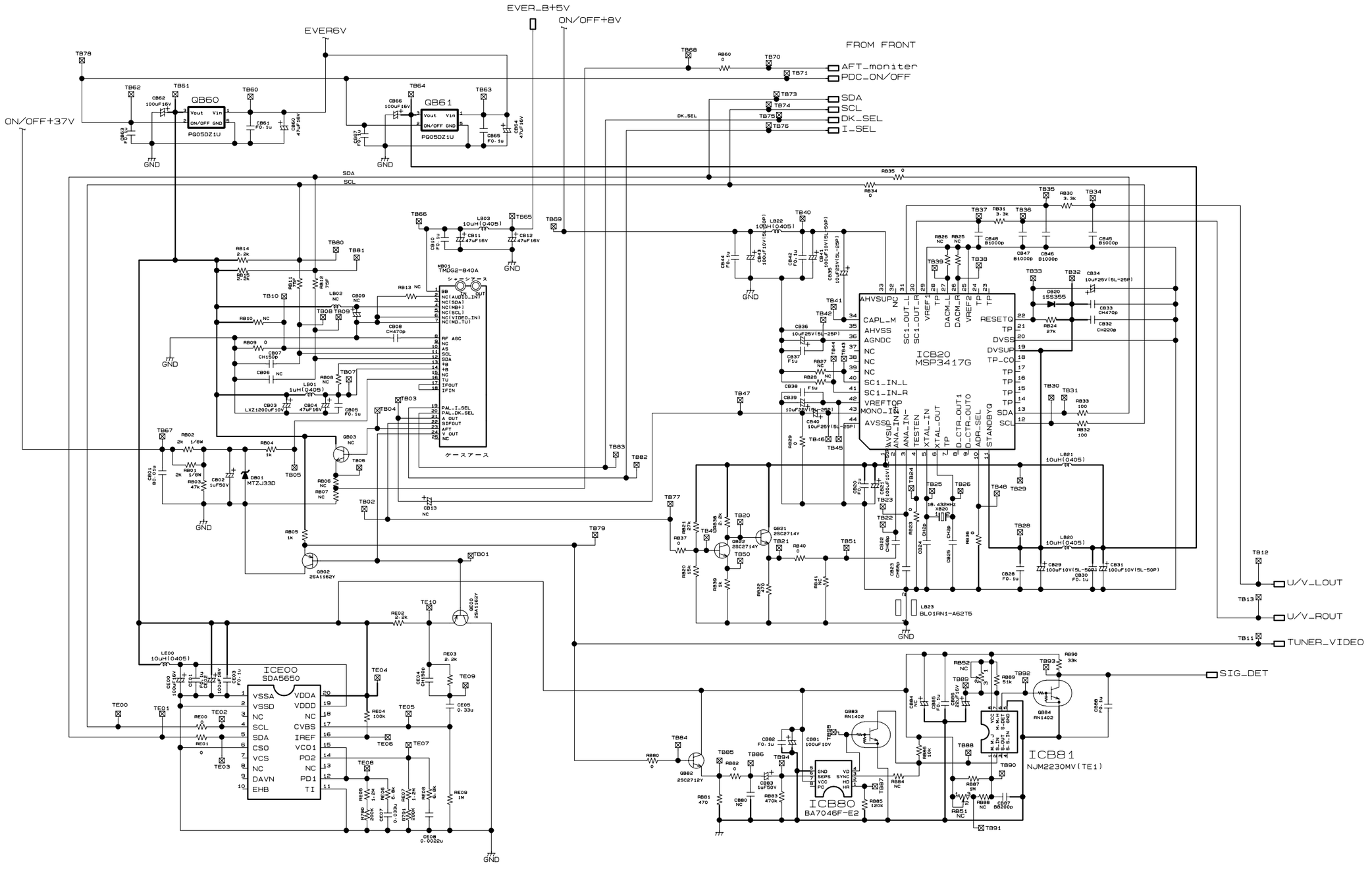


Fig. 3-4-4

4-4-2. Timer Circuit Diagram

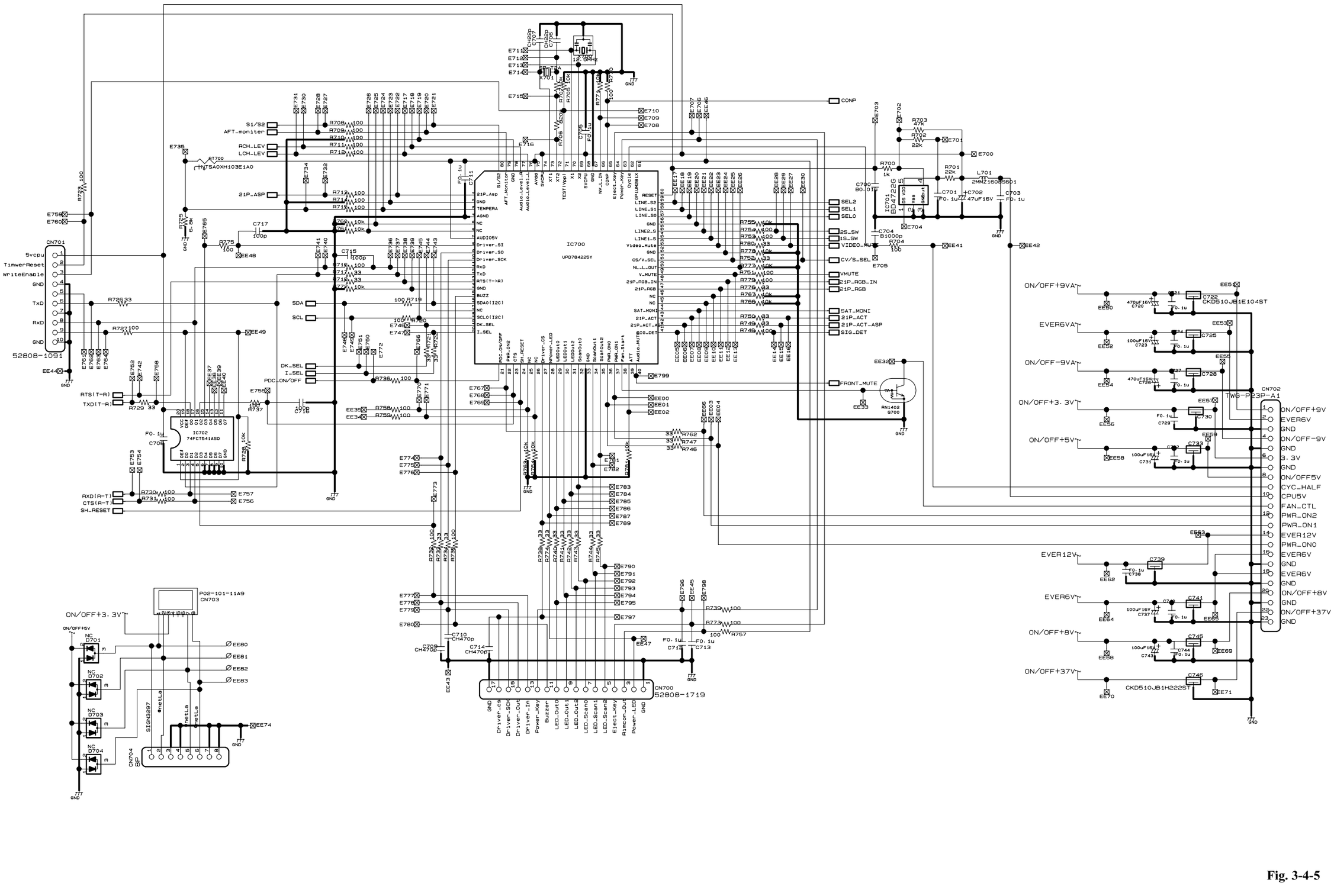


Fig. 3-4-5

4-4-3. Audio Circuit Diagram

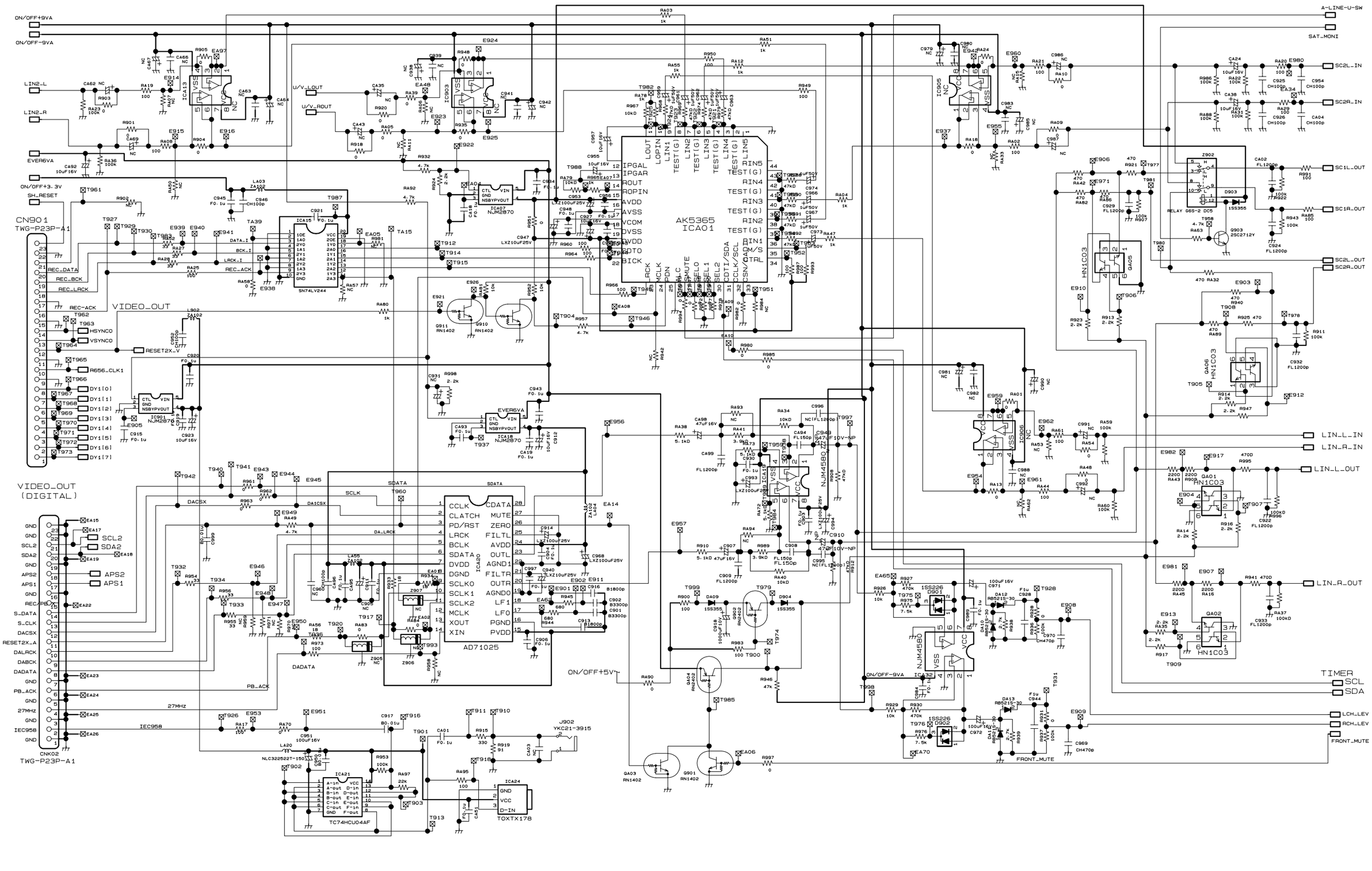


Fig. 3-4-6

4-4-4. Video Circuit Diagram

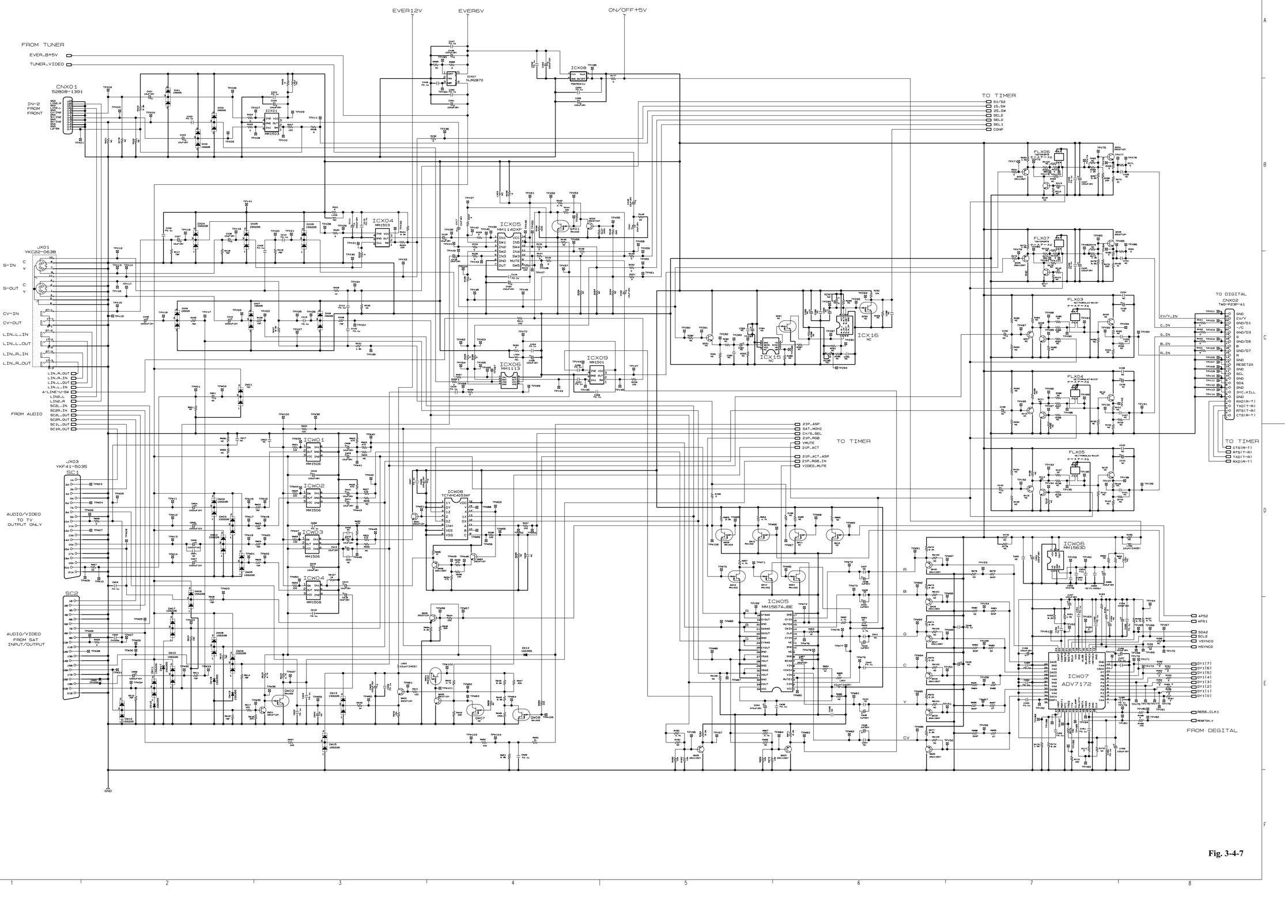
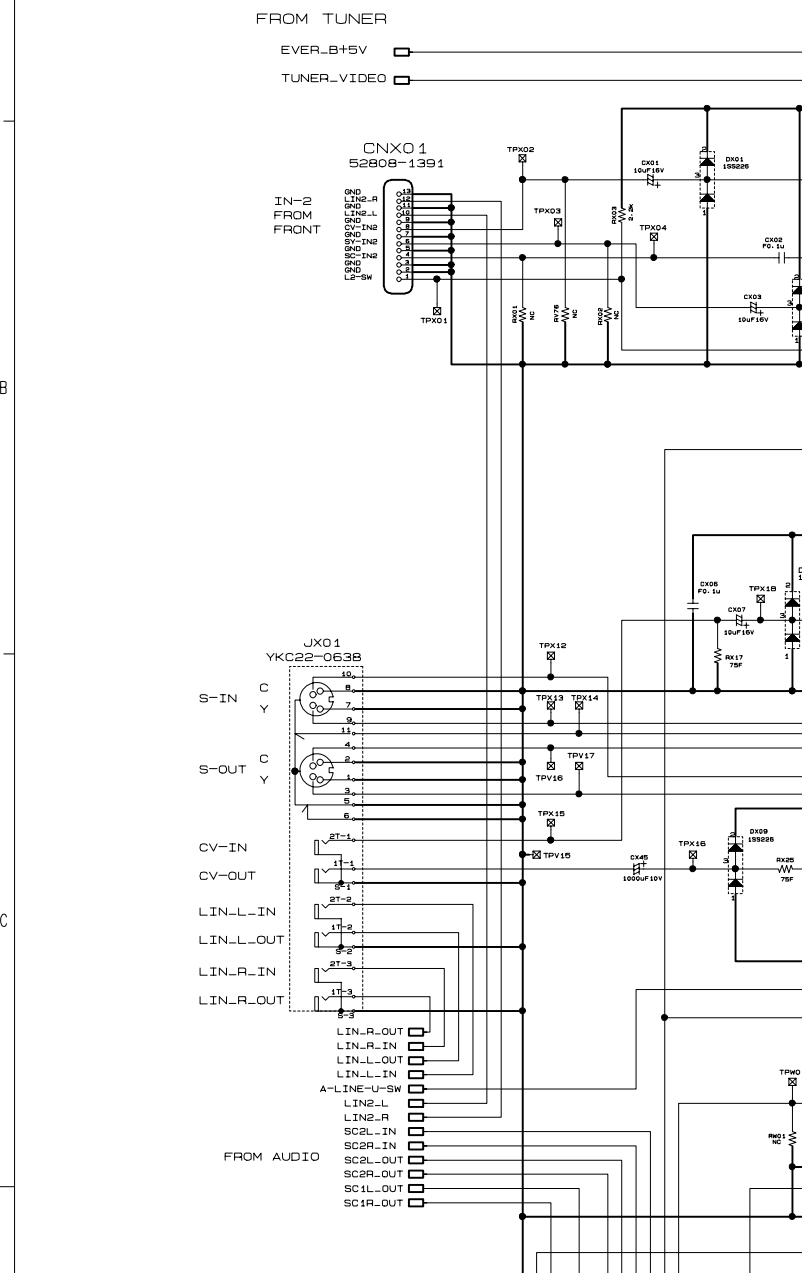
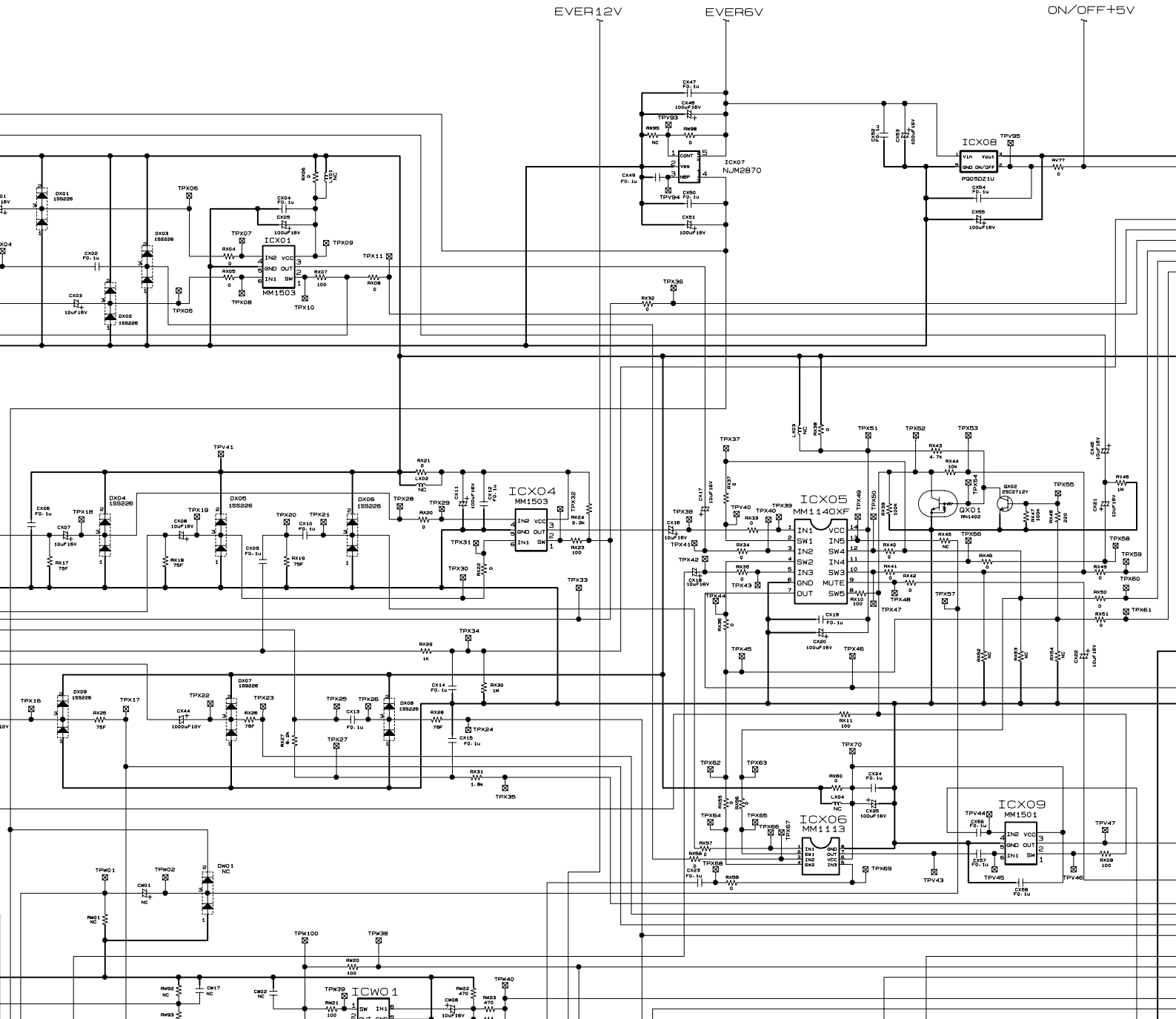
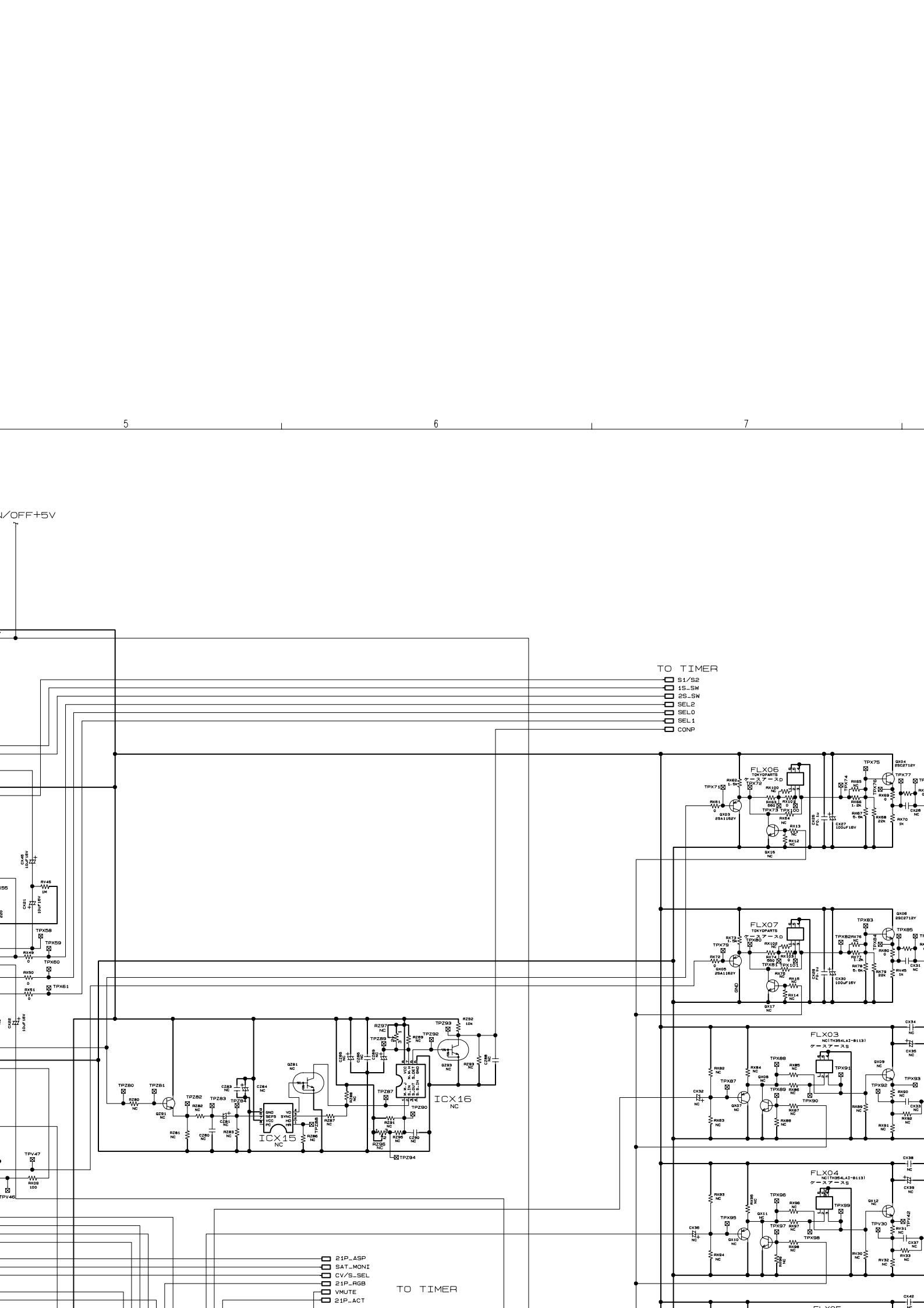


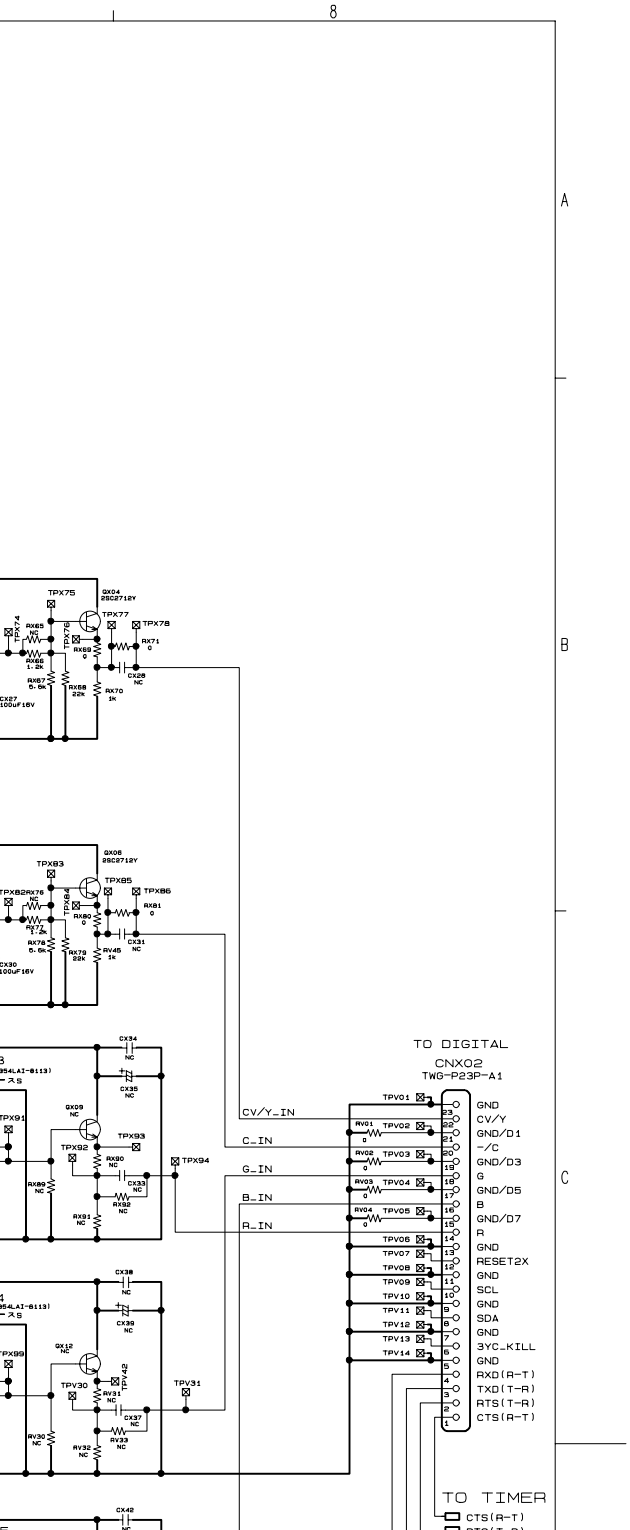
Fig. 3-4-7

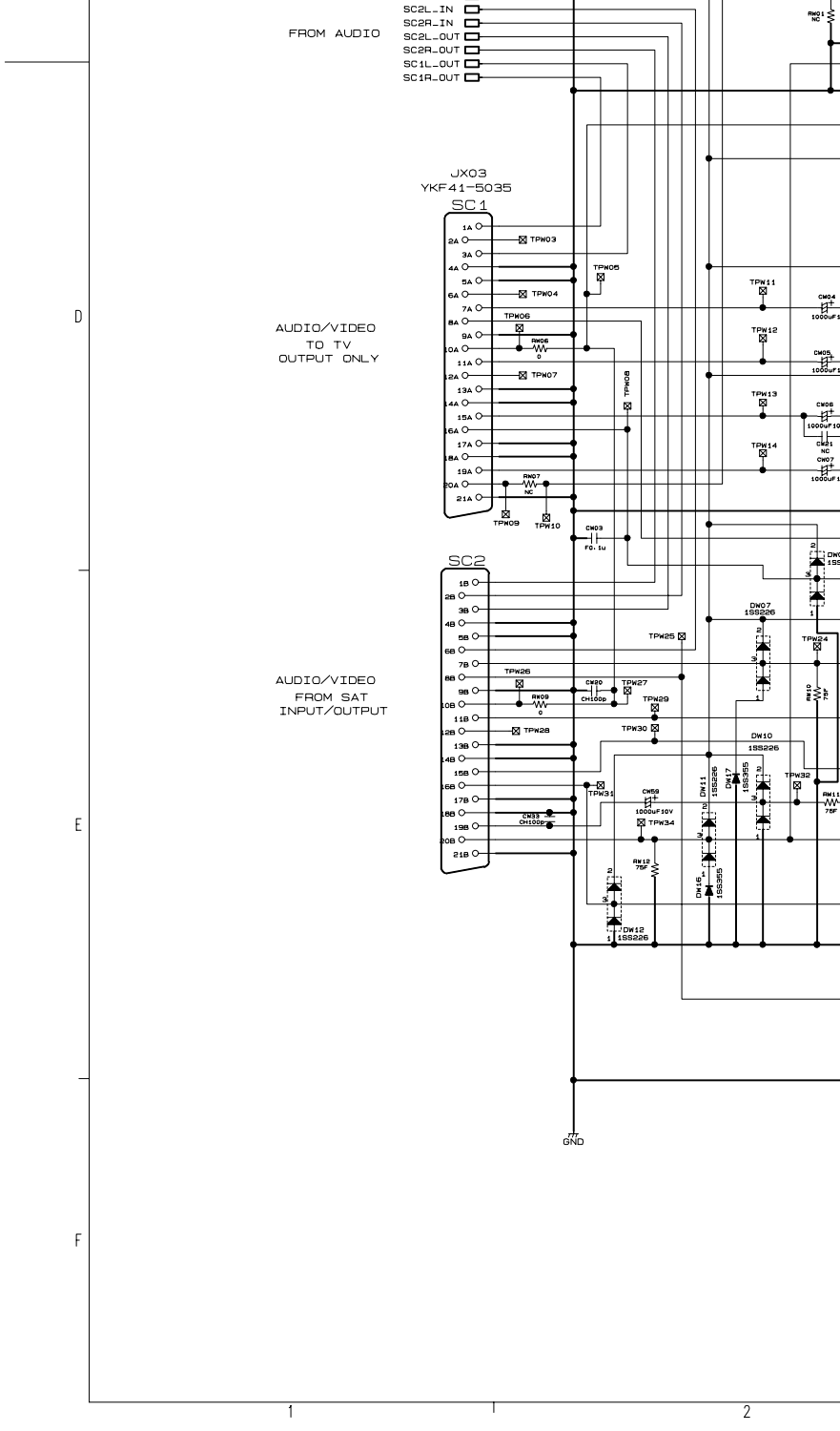
4-4-4. Video Circuit Diagram

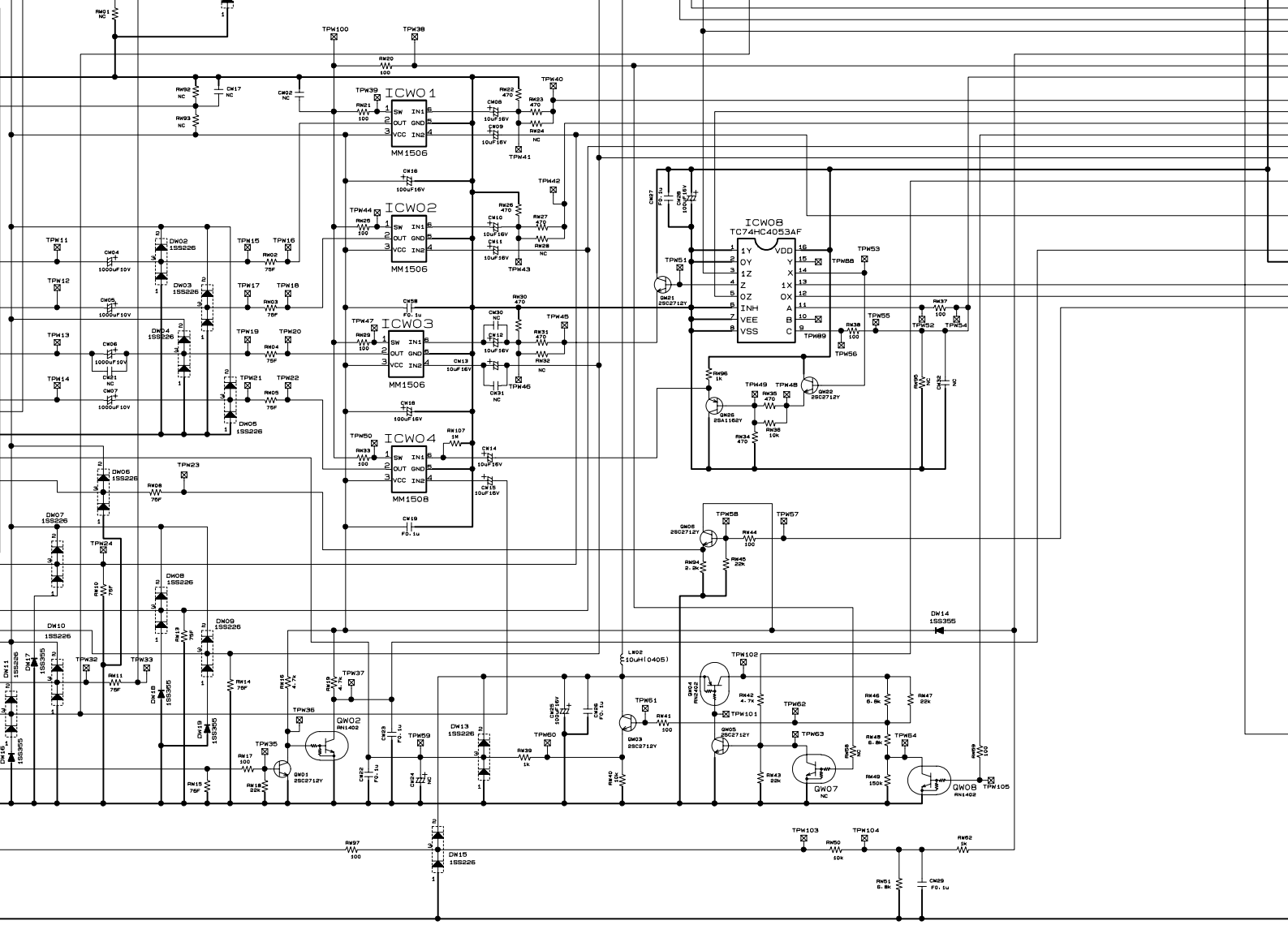


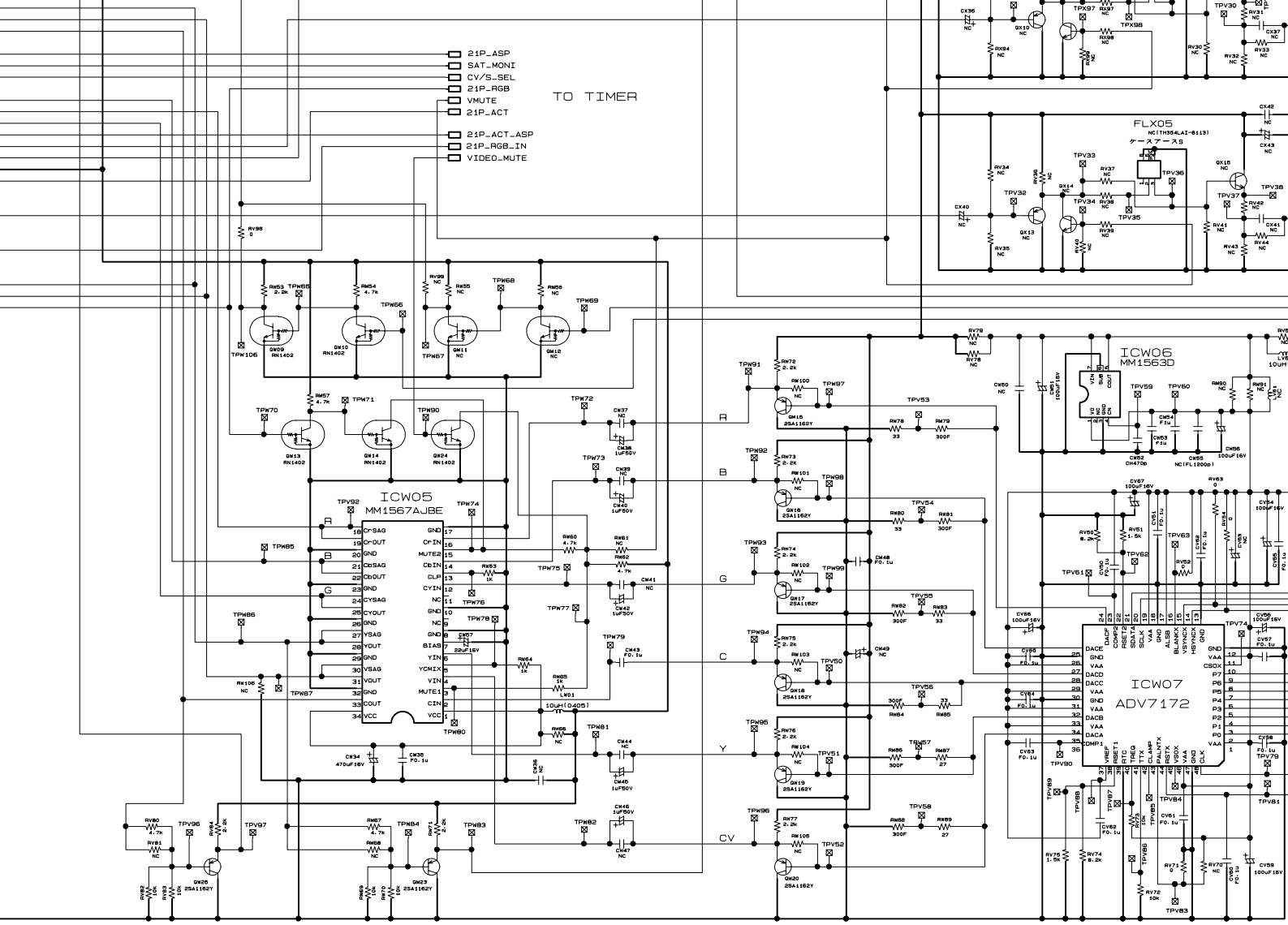

EVER12V
EVER6V
ON/OFF+5V
ICX01
MM1503
ICX04
MM1503
ICX05
MM1140XF
ICX06
MM1113
ICX07
NJM2870
ICX08
PQ05DZ1U
ICX09
MM1501
ICWO1
QX01
2SC2712Y
RN1402


5
6
7
N/OFF+5V
TO TIMER
S1/S2
1S_SW
2S_SW
SEL2
SEL0
SEL1
CONP
FLX06
FLX07
FLX03
FLX04
ICX16
NC
ICX15
NC
21P_ASP
SAT_MONI
CV/S_SEL
21P_RGB
VMUTE
21P_ACT
TO TIMER


8
A
B
C
TPX75
QX04
2SC2712Y
TPX77
TPX78
RX71
0
RX65
NC
TPX74
TPX76
RX69
0
RX66
1.2k
RX67
5.6k
RX68
22k
RX70
1K
CX28
NC
CX27
100UF16V
TPXB3
QX06
2SC2712Y
TPXB5
TPXB6
RXB1
0
TPXB2
RX76
NC
TPXB4
RXB0
0
RX77
1.2k
RX78
5.6k
RX79
22k
RV45
1K
CX31
NC
CX30
100UF16V
CX34
NC
CX35
NC
QX09
NC
TPX93
TPX92
RX80
NC
TPX94
RX89
NC
CX33
NC
RX81
NC
RX91
NC
CX38
NC
CX39
NC
QX12
NC
TPV31
TPV30
RV31
NC
CX37
NC
RV30
NC
RV32
NC
RV33
NC
CX42
NC
CV/Y_IN
C_IN
G_IN
B_IN
R_IN
TO DIGITAL
CNX02
TWG-P23P-A1
TPV01
TPV02
TPV03
TPV04
TPV05
TPV06
TPV07
TPV08
TPV09
TPV10
TPV11
TPV12
TPV13
TPV14
RV01
RV02
RV03
RV04
GND
CV/Y
GND/D1
-/C
GND/D3
G
GND/D5
B
GND/D7
R
GND
RESET2X
GND
SCL
GND
SDA
GND
3YC_KILL
GND
RXD(R-T)
TXD(T-R)
RTS(T-R)
CTS(R-T)
TO TIMER
CTS(R-T)


FROM AUDIO
SC2L_IN
SC2R_IN
SC2L_OUT
SC2R_OUT
SC1L_OUT
SC1R_OUT
JX03
YKF41-5035
SC1
AUDIO/VIDEO
TO TV
OUTPUT ONLY
SC2
AUDIO/VIDEO
FROM SAT
INPUT/OUTPUT
GND
D
E
F
1
2


ICW01
MM1506
ICW02
MM1506
ICW03
MM1506
ICW04
MM1508
ICW08
TC74HC4053AF
QW02
QW03
QW07
QW08
DW02 1SS226
DW03 1SS226
DW04 1SS226
DW05 1SS226
DW06 1SS226
DW07 1SS226
DW08 1SS226
DW09 1SS226
DW10 1SS226
DW11 1SS226
DW13 1SS226
DW15 1SS226
DW14 1SS355
DW16 1SS355
DW17 1SS355
DW18 1SS355
DW19 1SS355
LW02 10uH(1005)
QW04 RN1402
QW05 2SC2712Y
QW06 2SA1162Y
QW21 2SC2712Y
QW22 2SC2712Y
QW23 2SC2712Y


21P_ASP
SAT_MONI
CV/S_SEL
21P_RGB
VMUTE
21P_ACT
TO TIMER
21P_ACT_ASP
21P_RGB_IN
VIDEO_MUTE
FLX05
ICW05
MM1567AJBE
ICW06
MM1563D
ICW07
ADV7172
R
B
G
C
Y
CV

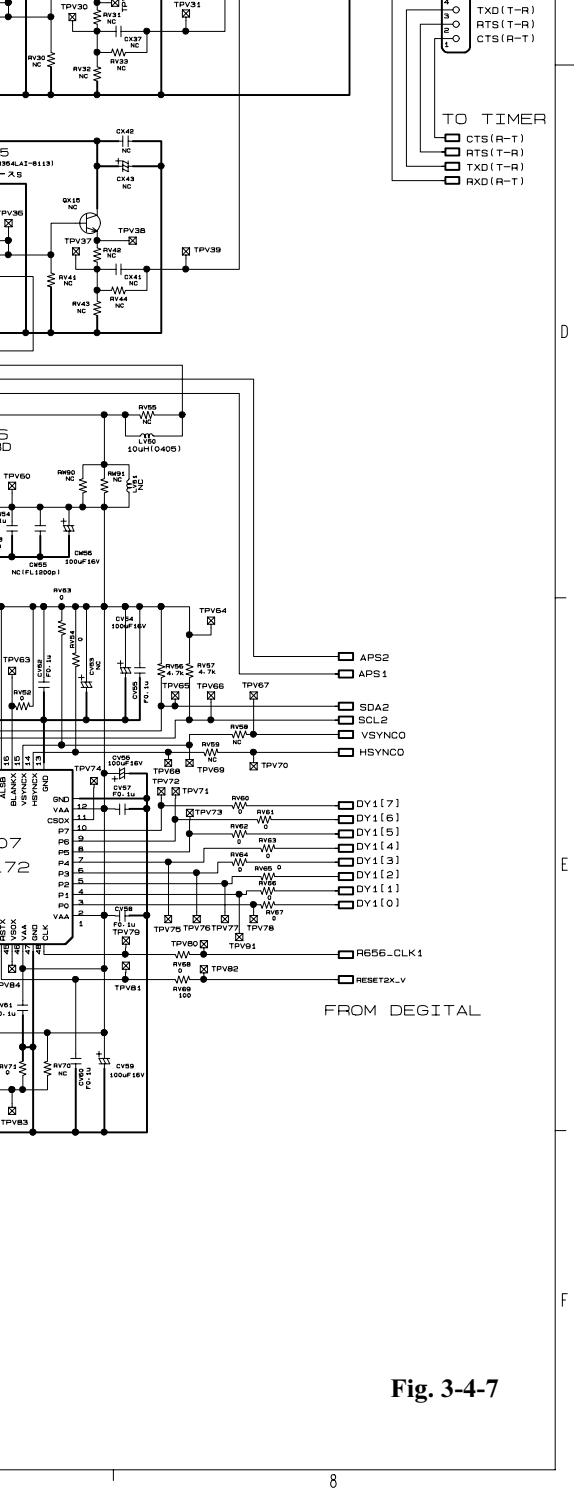

TXD(T-R)
RTS(T-R)
CTS(R-T)
TO TIMER
CTS(R-T)
RTS(T-R)
TXD(T-R)
RXD(R-T)
APS2
APS1
SDA2
SCL2
VSYNCO
HSYNCO
DY1[7]
DY1[6]
DY1[5]
DY1[4]
DY1[3]
DY1[2]
DY1[1]
DY1[0]
R656_CLK1
RESET2X_V
FROM DEGITAL

Fig. 3-4-7

4-5. Digital Circuit Diagram

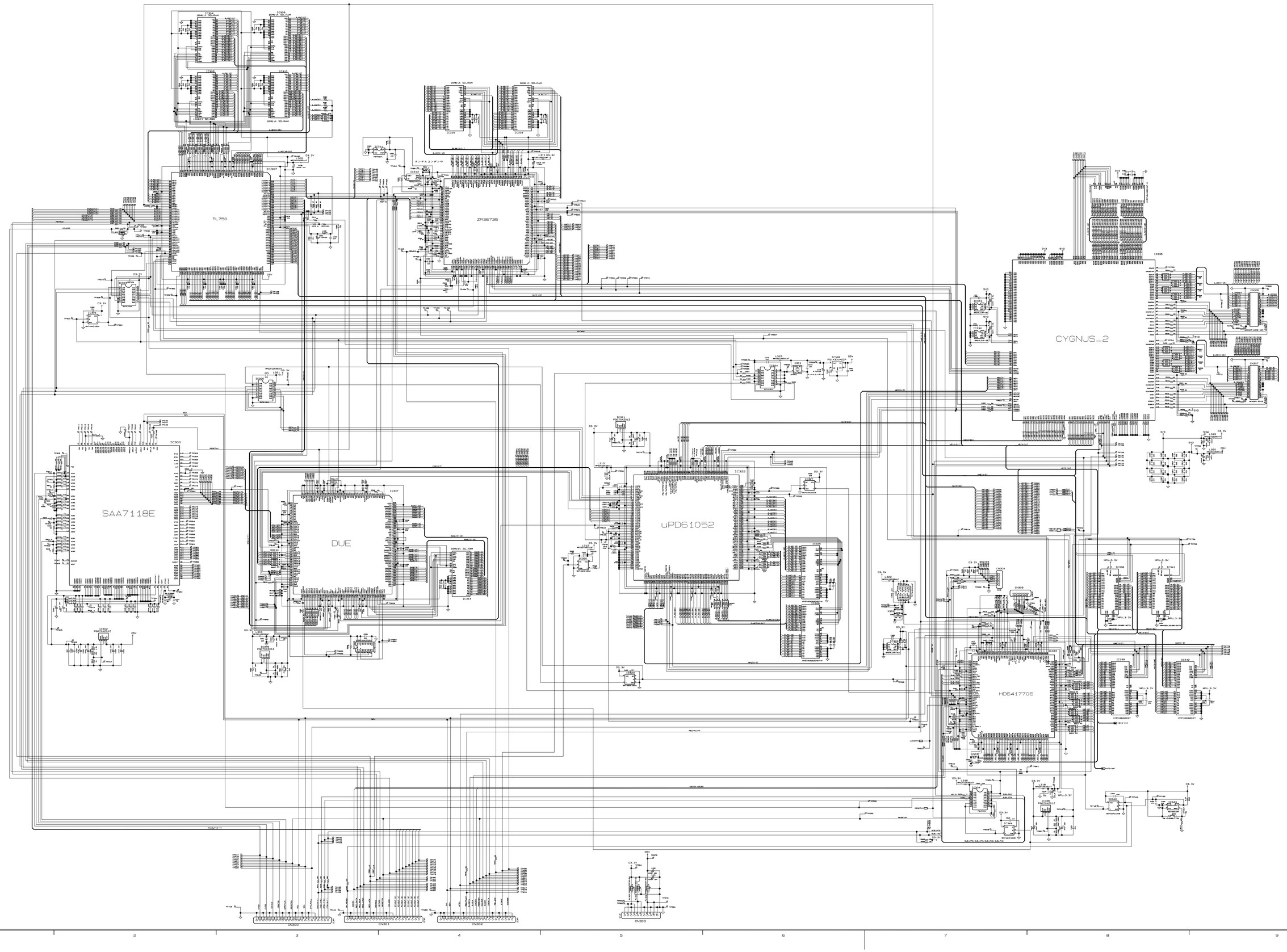
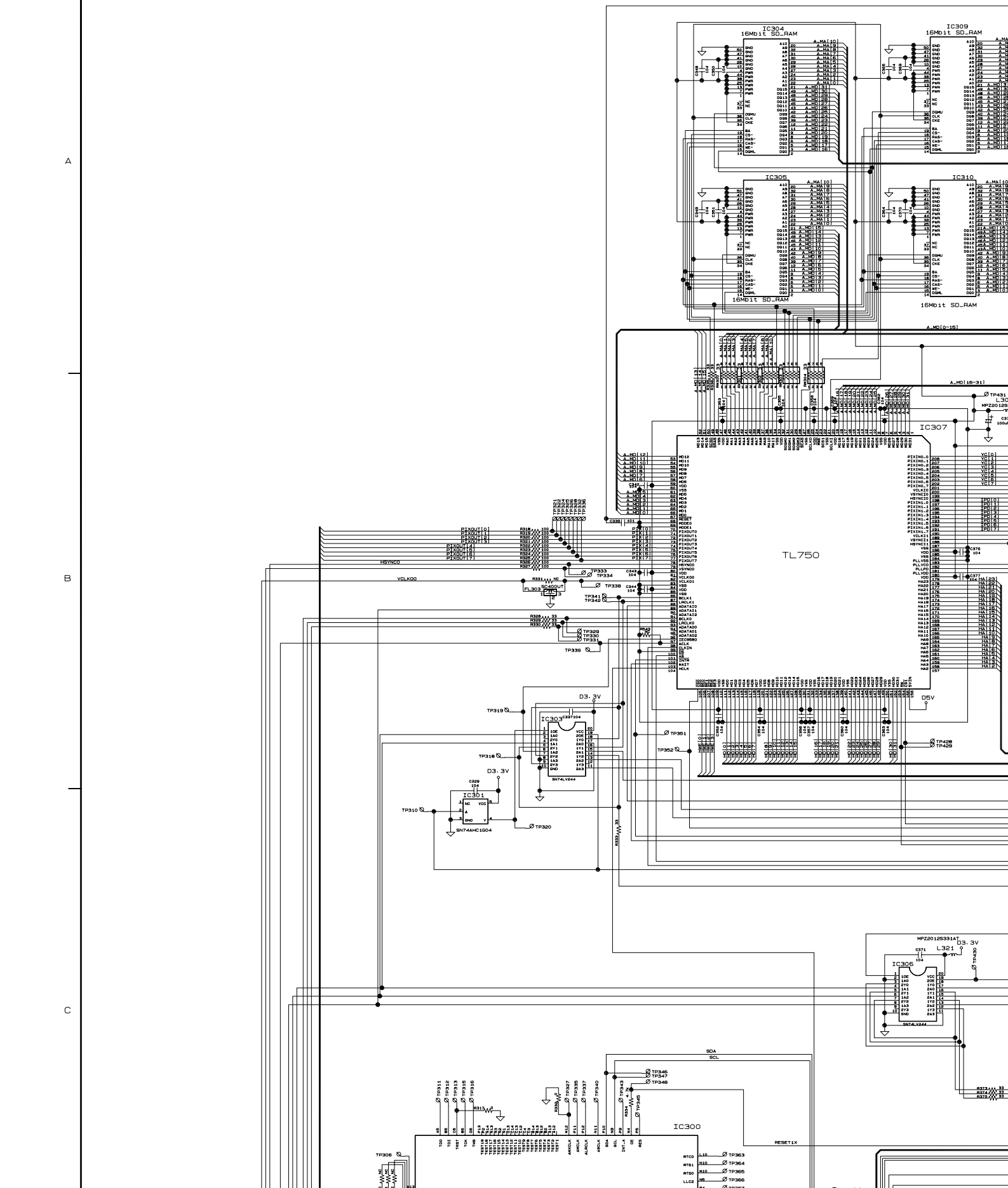
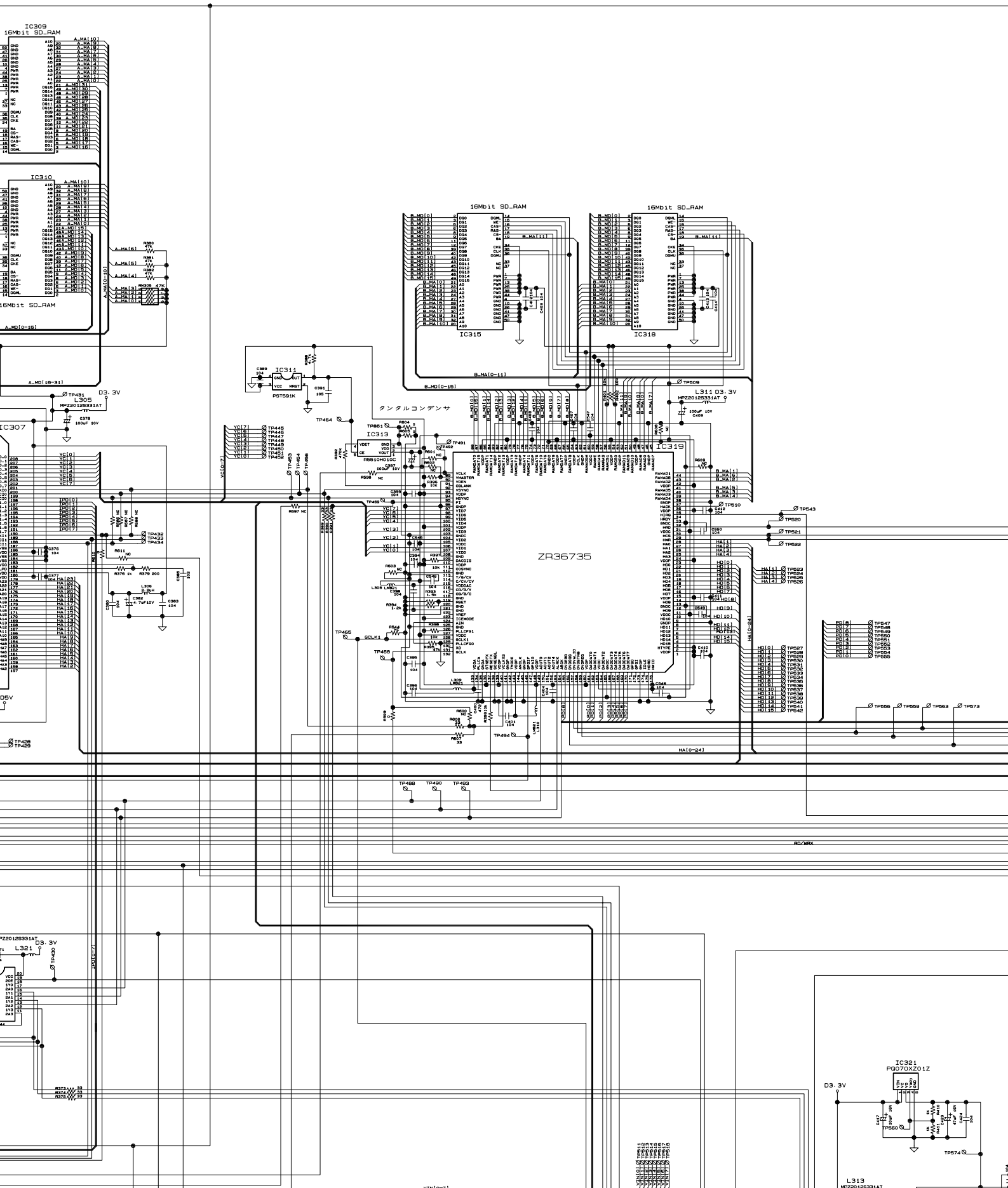
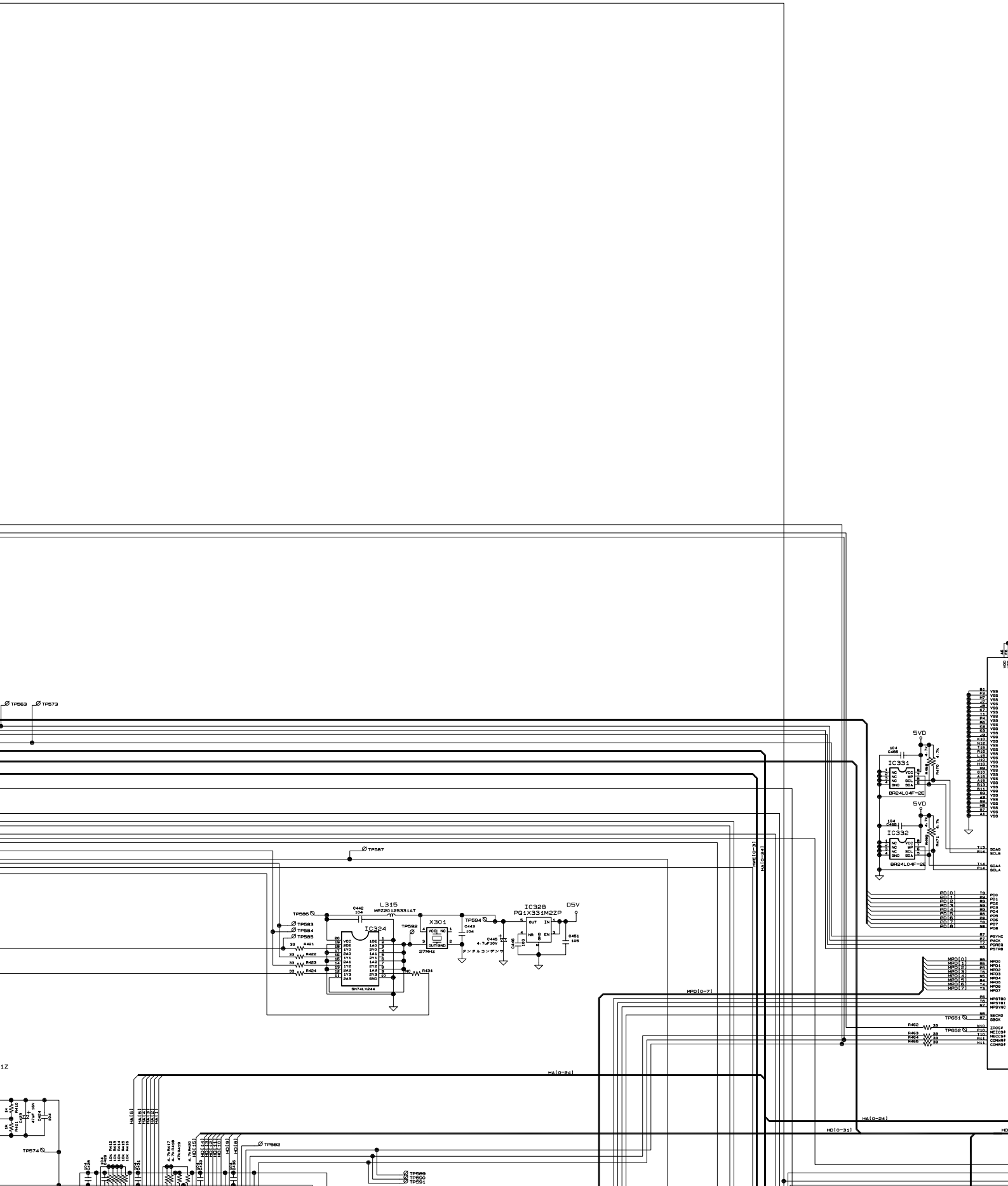


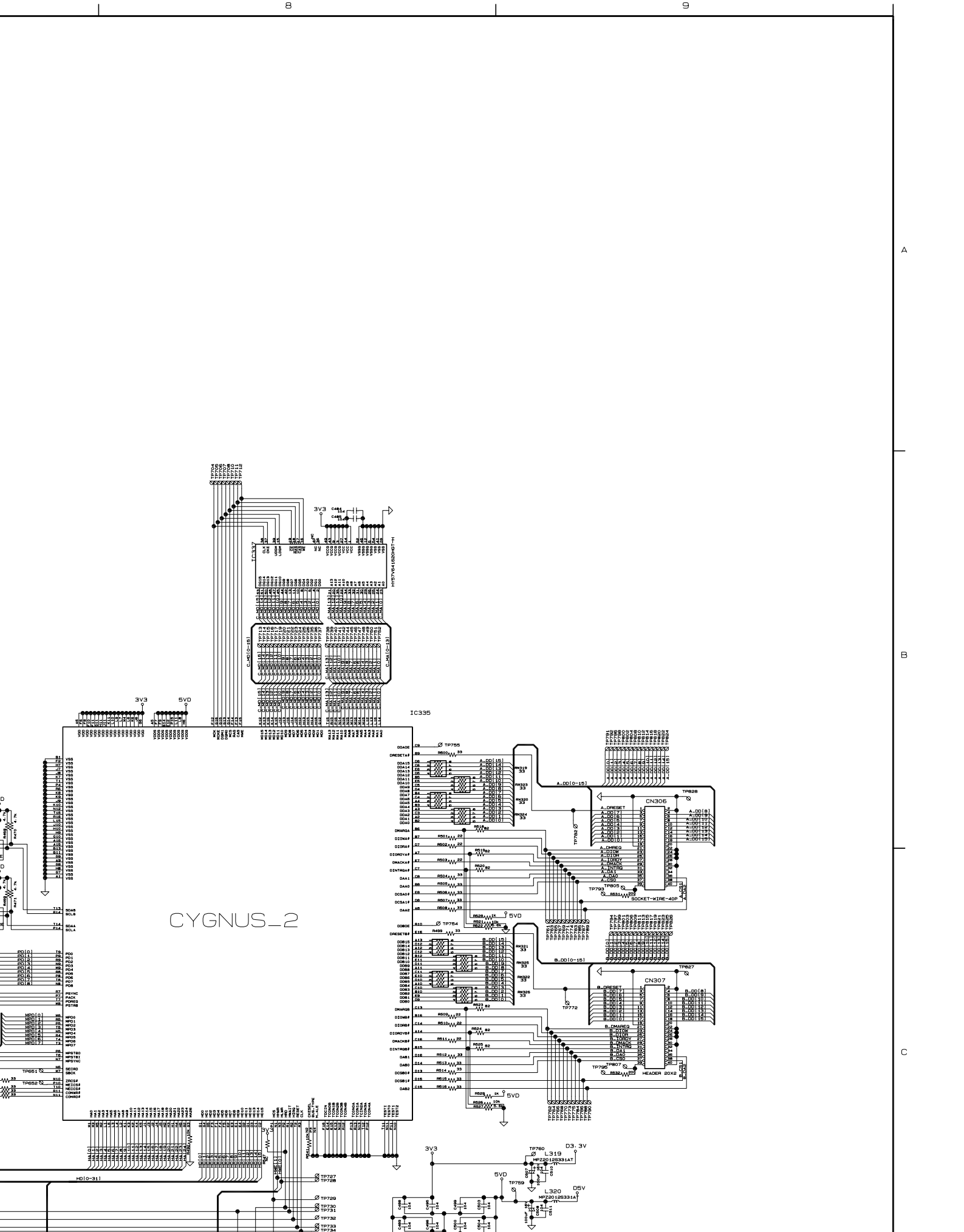
Fig. 3-4-8

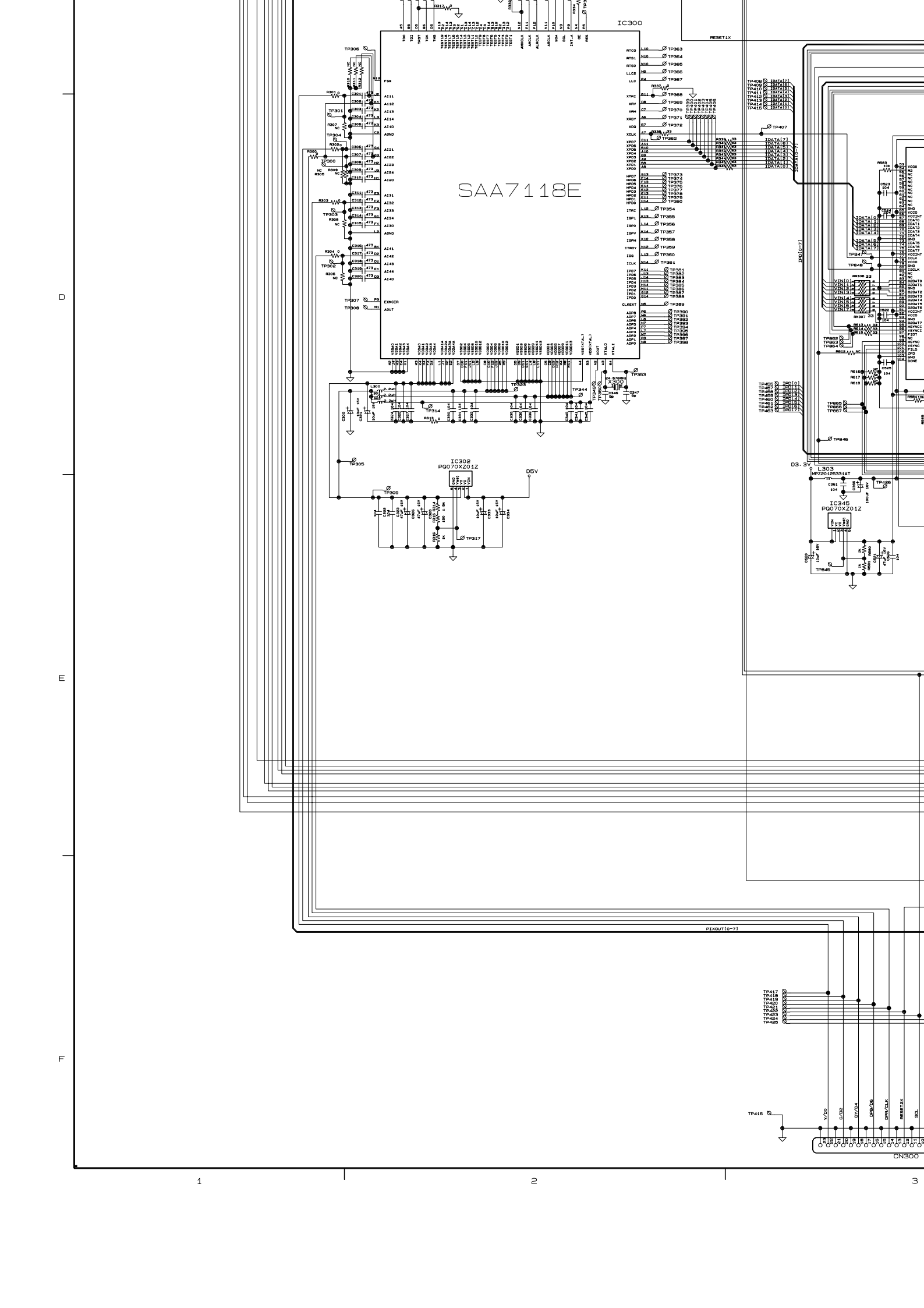
4-5. Digital Circuit Diagram

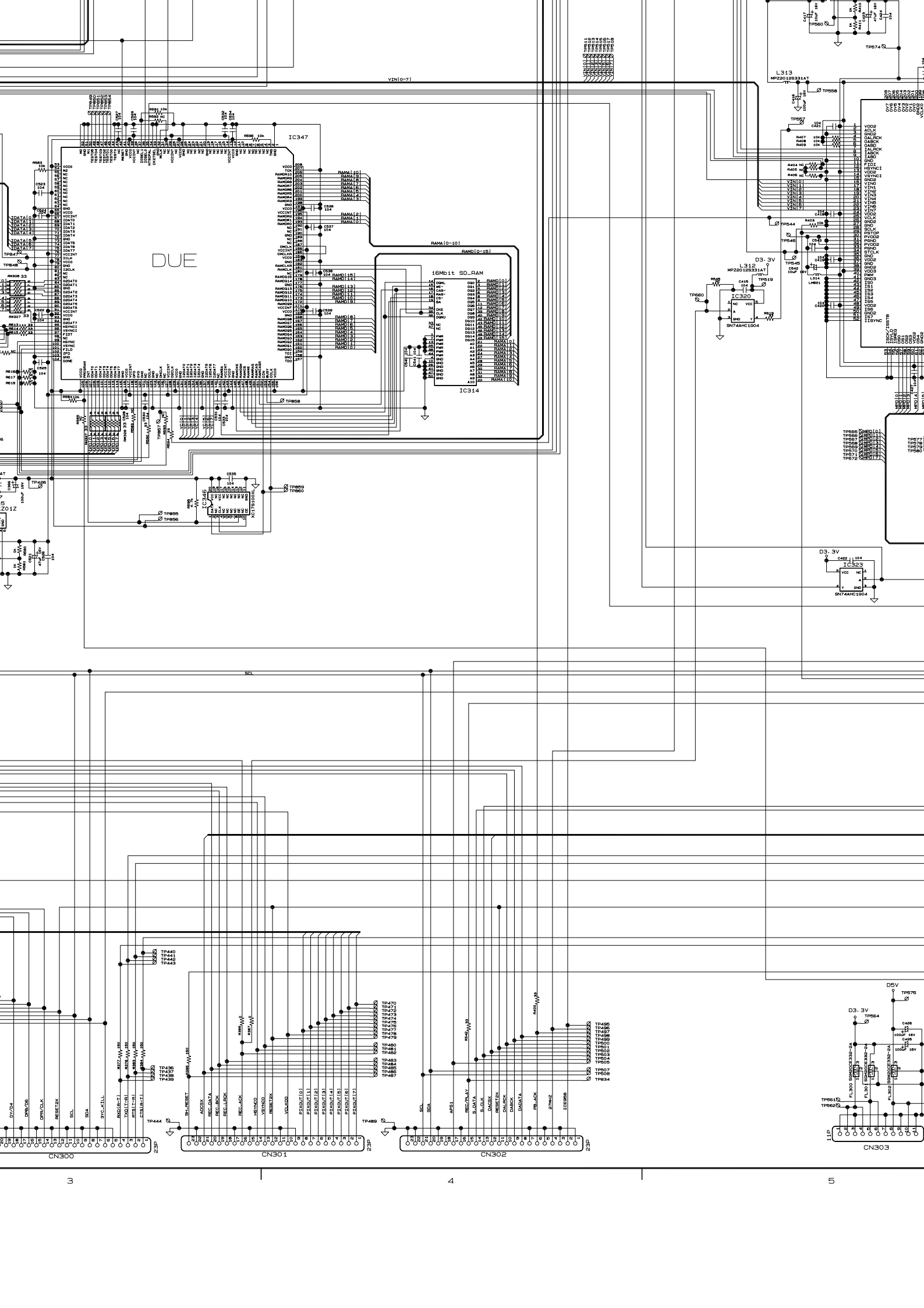


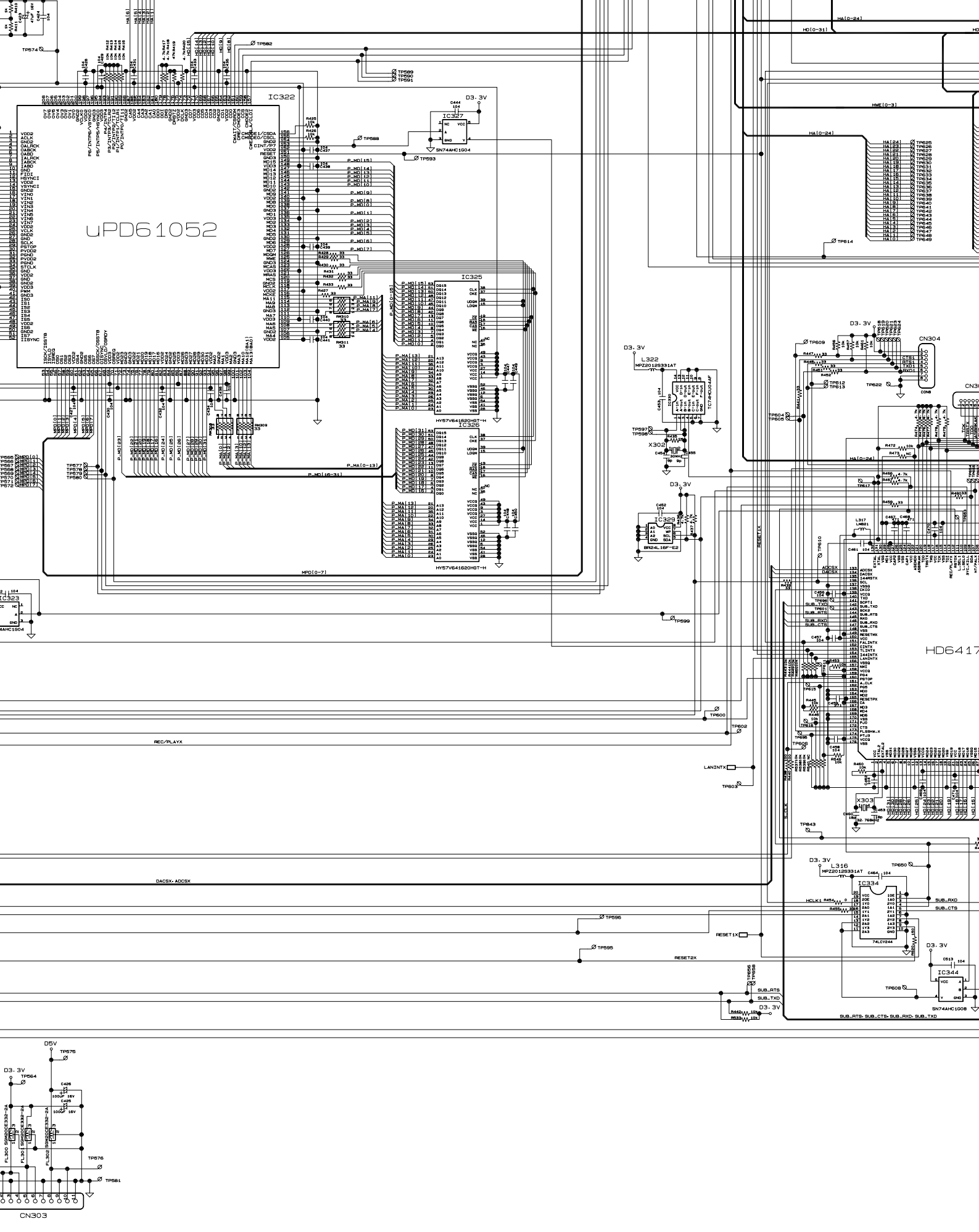

IC309
16Mbit SD_RAM
IC310
16Mbit SD_RAM
IC315
16Mbit SD_RAM
IC318
16Mbit SD_RAM
IC311
PST591K
IC313
R5510H010C
IC319
ZR36735
IC307
L305
MPZ2012S331AT
L311
MPZ2012S331AT
L321
MPZ2012S331AT
L313
MPZ2012S331AT
IC321
PQ070XZ01Z
D3.3V
タンタルコンデンサ
A_MD[0-15]
A_MD[16-31]
B_MD[0-15]
B_MA[0-11]
HA[0-24]
RD/WRX


TP563
TP573
TP587
TP586
TP583
TP584
TP585
L315
MPZ2012S331AT
C442
104
IC324
SN74LV244
X301
27MHz
TP592
TP594
C443
104
C445
4.7uF10V
C446
104
IC328
PQ1X331M2ZP
D5V
C451
105
R421
R422
R423
R424
R434
33
5VD
IC331
IC332
BR24L04F-2E
C456
C461
R469
R470
R471
4.7K
SDA5
SCL5
SDAA
SCLA
MPD[0-7]
MPD[0-2]
PSYNC
PACK
PDREQ
PSTRB
MPSTB0
MPSTB1
MPSYNC
SECND
SRCK
TP651
TP652
R462
R463
R464
R465
ZRCS#
MECCS#
MECCS4
CONAR#
CONDI#
HA[0-24]
HD[0-31]
HA[5]
HA[6]
HD[8]
HD[9]
HD[14]
HD[15]
TP574
TP582
TP588
TP590
TP591
R325
R326
R351
R353
R354
R355
R356
4.7k
47k
104
105
470
1K


8
9
A
B
C
CYGNUS_2
IC335
IC337
HY57V641620HGT-H
CN305
CN307
SOCKET-WIRE-40P
HEADER 20X2
3V3
5VD
D3.3V
D5V
A_DD[0-15]
B_DD[0-15]
C_MD[0-15]
C_MA[0-13]
HD[0-31]


SAA7118E
IC300
IC302
PQ070XZ01Z
IC345
PQ070XZ01Z
L303
MPZ2012S331AT
X300
D5V
D3.3V
RESET1X
IDATA[7-0]
IPD[0-7]
PIXOUT[0-7]
CN300
1
2
3
D
E
F


DUE
IC347
IC314
16Mbit SD_RAM
IC320
SN74AHC1G04
IC323
SN74AHC1G04
D3.3V
D5V
VIN[0-7]
RAMA[0-10]
RAMD[0-15]
SCL
SDA
CN300
CN301
CN302
CN303
3
4
5


uPD61052
IC322
IC325
IC326
IC327
IC329
IC334
IC344
HY57V641620HGT-H
SN74AHC1G04
74LCV244
SN74AHC1G08
HD6417
CN303
CN304
X302
X303
L322
L316
D3.3V
D5V
P_MD[0-31]
P_MA[0-13]
HA[0-24]
HD[0-31]
HWE[0-3]
REC/PLAYX
DACSX, ADCSX
RESET1X
RESET2X
LANINTX
SUB_RTS, SUB_CTS, SUB_RXD, SUB_TXD

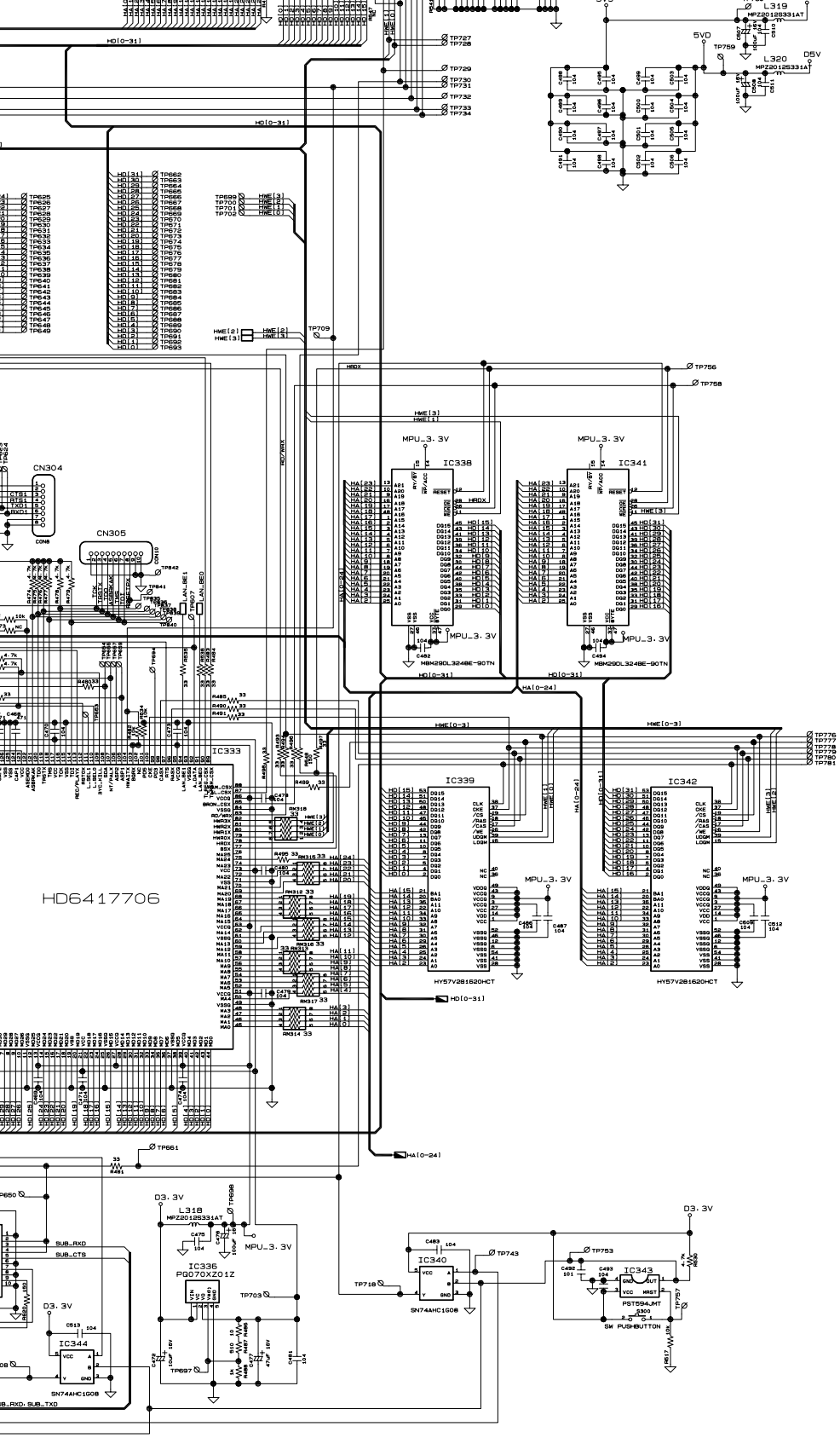

HD6417706
IC333
IC338
IC339
IC340
IC341
IC342
IC343
IC344
CN304
CN305
L318
L319
L320
MPU_3.3V
D3.3V
5VD
D5V
HD[0-31]
HA[0-24]
HWE[0-3]
HRDX
HWRX
SUB_RXD
SUB_CTS
SUB_TXD
HY57V281620HCT
SN74AHC1G08
SW PUSHBUTTON

Fig. 3-4-8

5. PC BOARDS

5-1. Jack PC Board

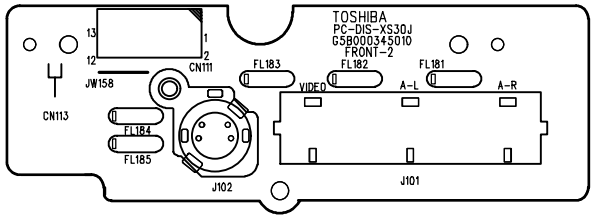


Fig. 3-5-1 EU55 Jack PC Board (Top side)

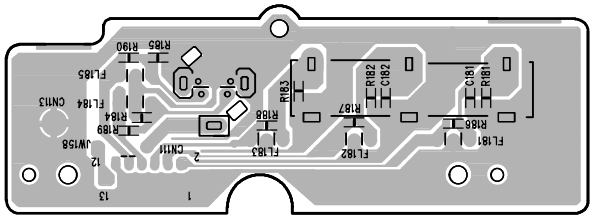


Fig. 3-5-2 EU55 Jack PC Board (Bottom side)

5-2. Front PC Board

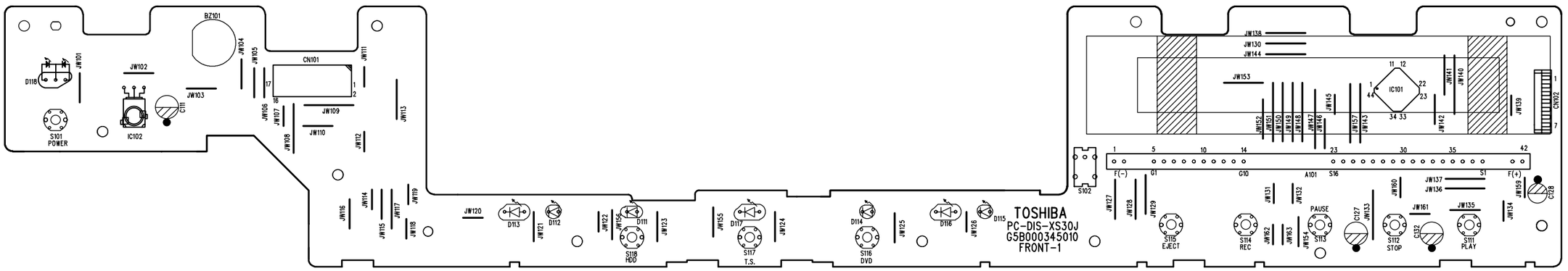


Fig. 3-5-3 EU03 Front PC Board (Top Side)

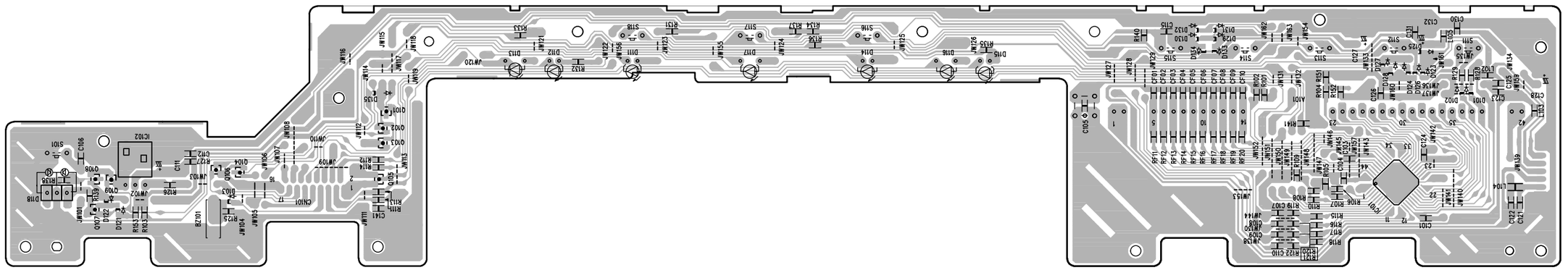


Fig. 3-5-4 EU03 Front PC Board (Bottom Side)

5-3. Mother PC Board

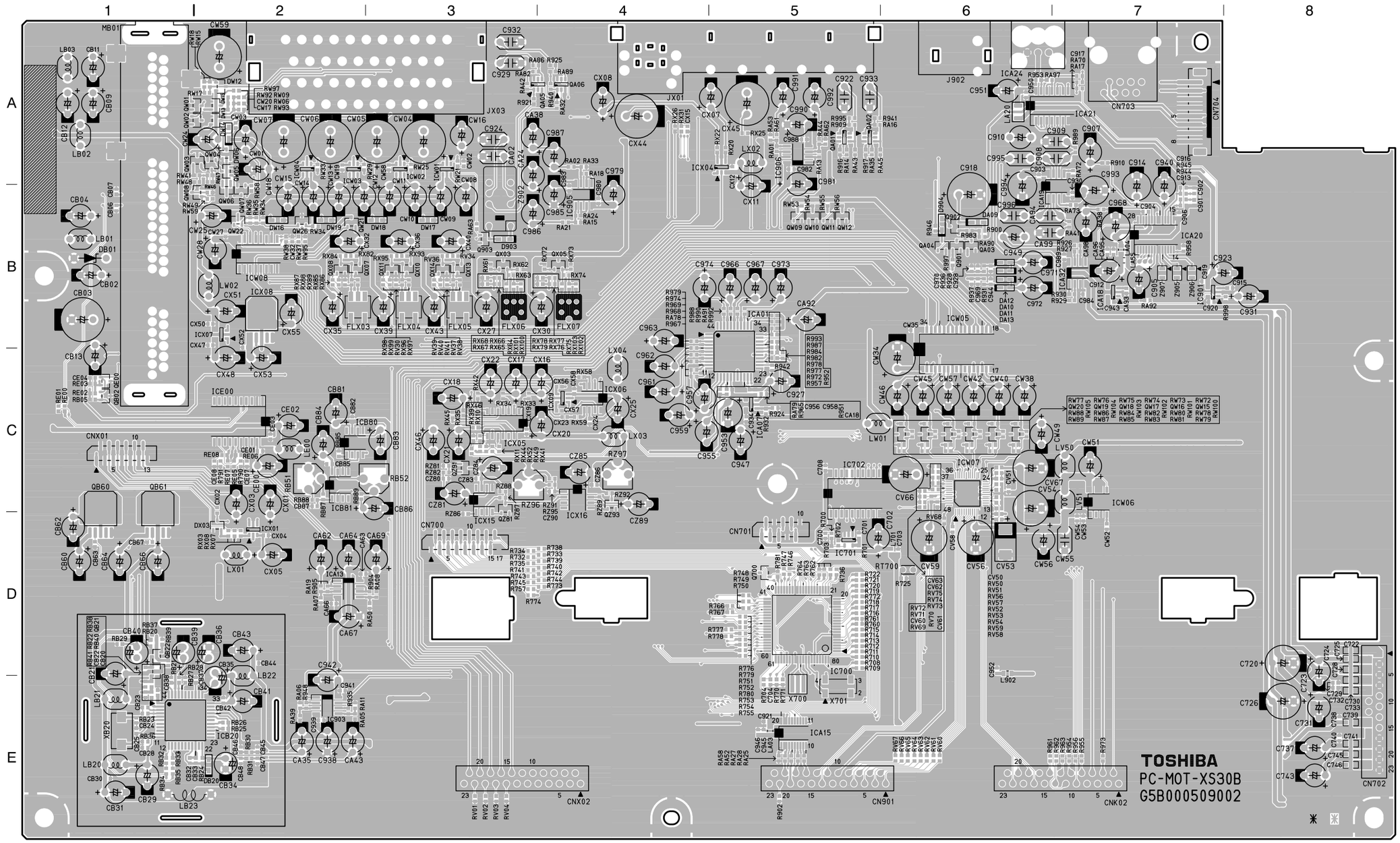


Fig. 3-5-5 EU05 Mother PC Board (Top side)

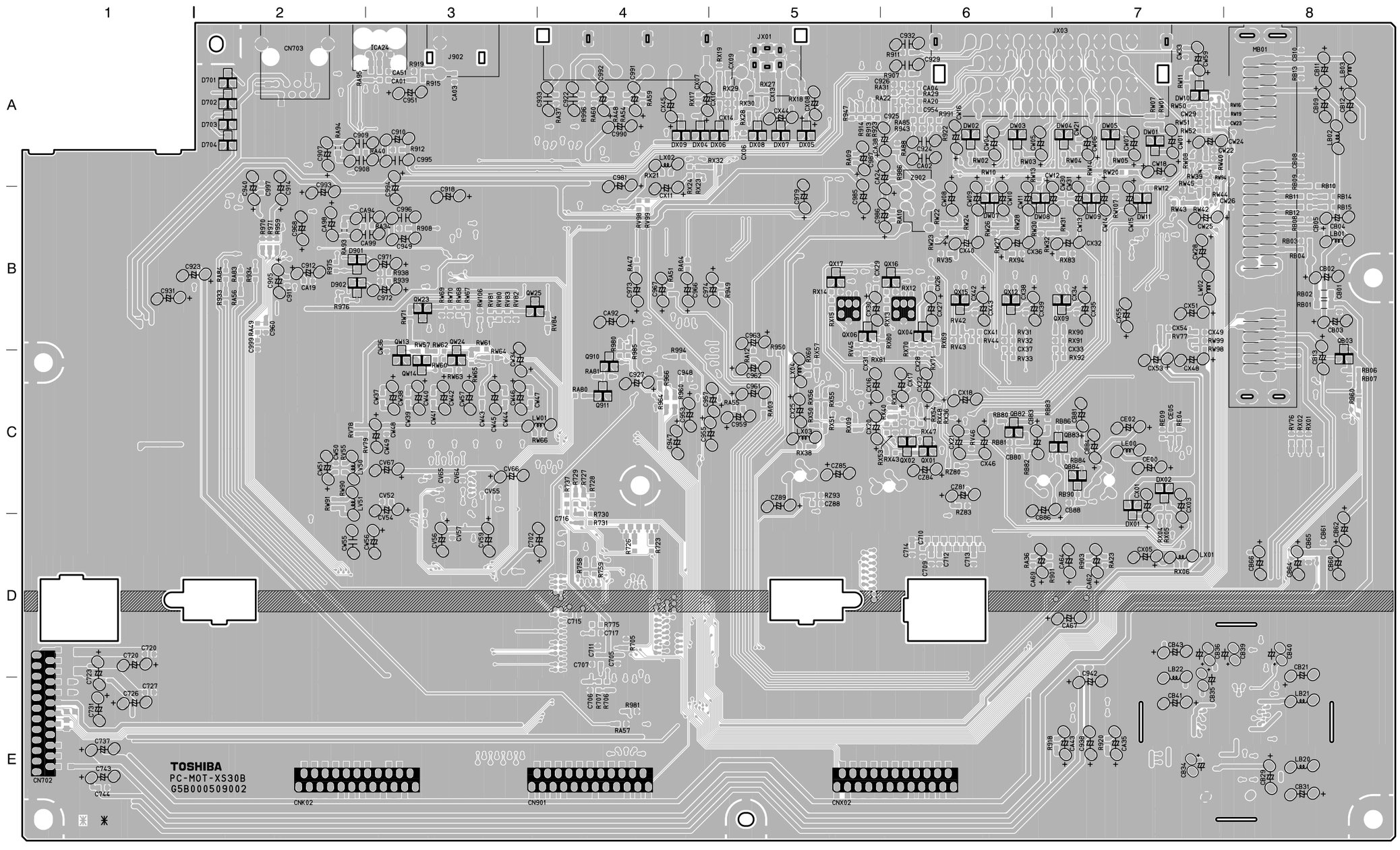


Fig. 3-5-6 EU05 Mother PC Board (Bottom side)

5-4. Digital PC Board

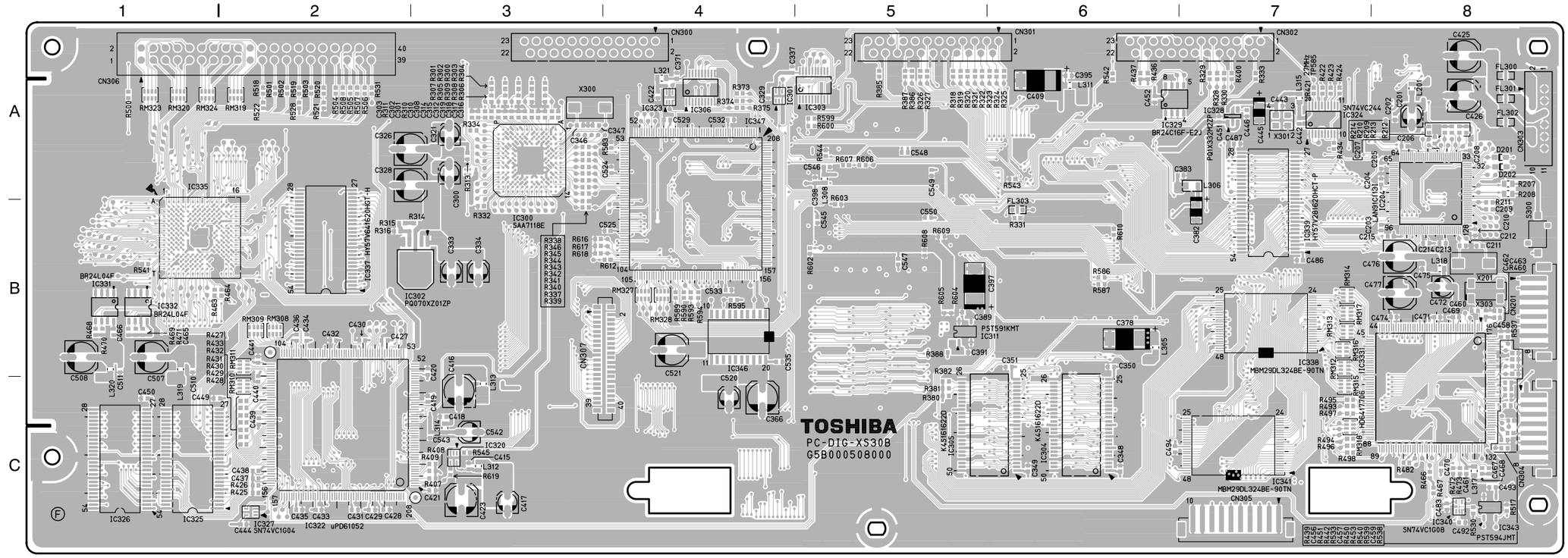


Fig. 3-5-7 EU01 Digital PC Board (Top side)

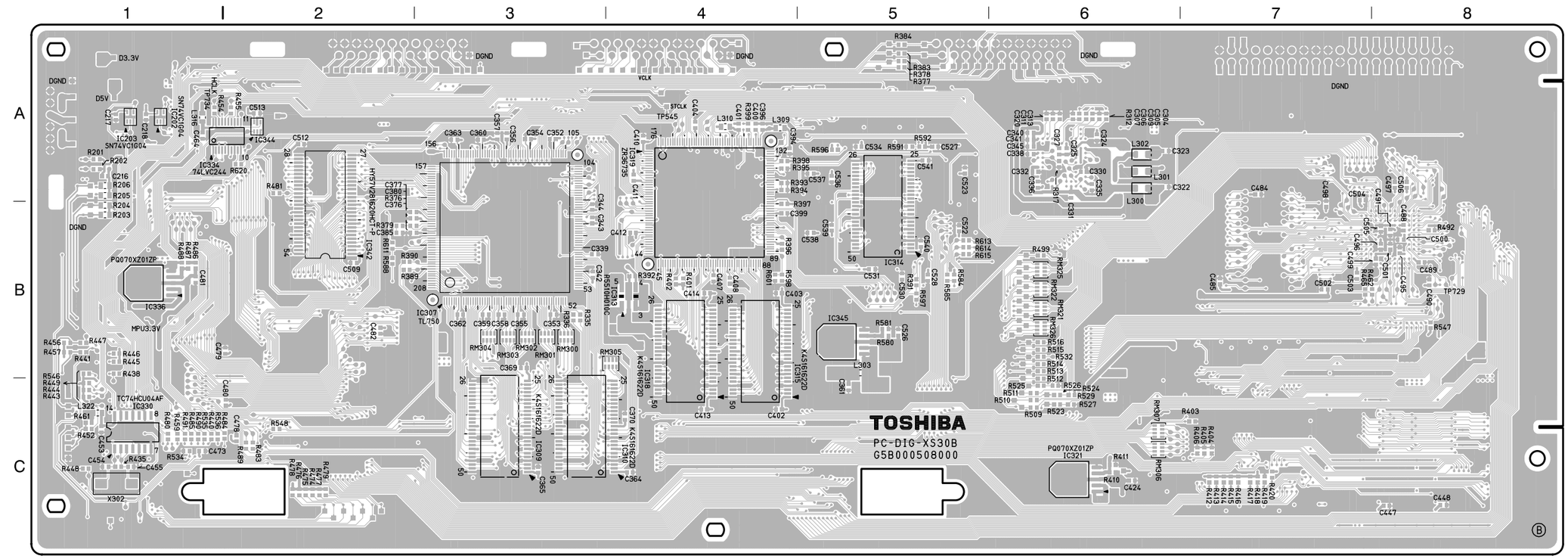


Fig. 3-5-8 EU01 Digital PC Board (Bottom side)

SECTION 4
PARTS LIST

SAFETY PRECAUTION

The parts identified by ! (⚠) mark are critical for safety. Replace only with part number specified.

The mounting position of replacement is to be identical with originals.

The substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.

NOTICE

The part number must be used when ordering parts in order to assist in processing, be sure to include the model number and description.

ABBREVIATIONS

1. Integrated Circuit (IC)

2. Capacitor (Cap)

- **Capacitance Tolerance (for Nominal Capacitance more than 10pF)**

Table 4-2-1

Symbol	B	C	D	F	G	J	K	M	N
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20	± 30

Symbol	P	Q	T	U	V	W	X	Y	Z
Tolerance %	+ 100 0	+ 30 – 10	+ 50 – 10	+ 75 – 10	+ 20 – 10	+ 100 – 10	+ 40 – 20	+ 150 – 10	+ 80 – 20

Ex. 10µF J = 10µF ± 5%

- **Capacitance Tolerance (for Nominal Capacitance 10pF or less)**

Table 4-2-2

Symbol	B	C	D	F	G
Tolerance pF	± 0.1	± 0.25	± 0.5	± 1	± 2

Ex. 10pF G = 10pF ± 2pF

3. Resistor (Res)

- **Resistance tolerance**

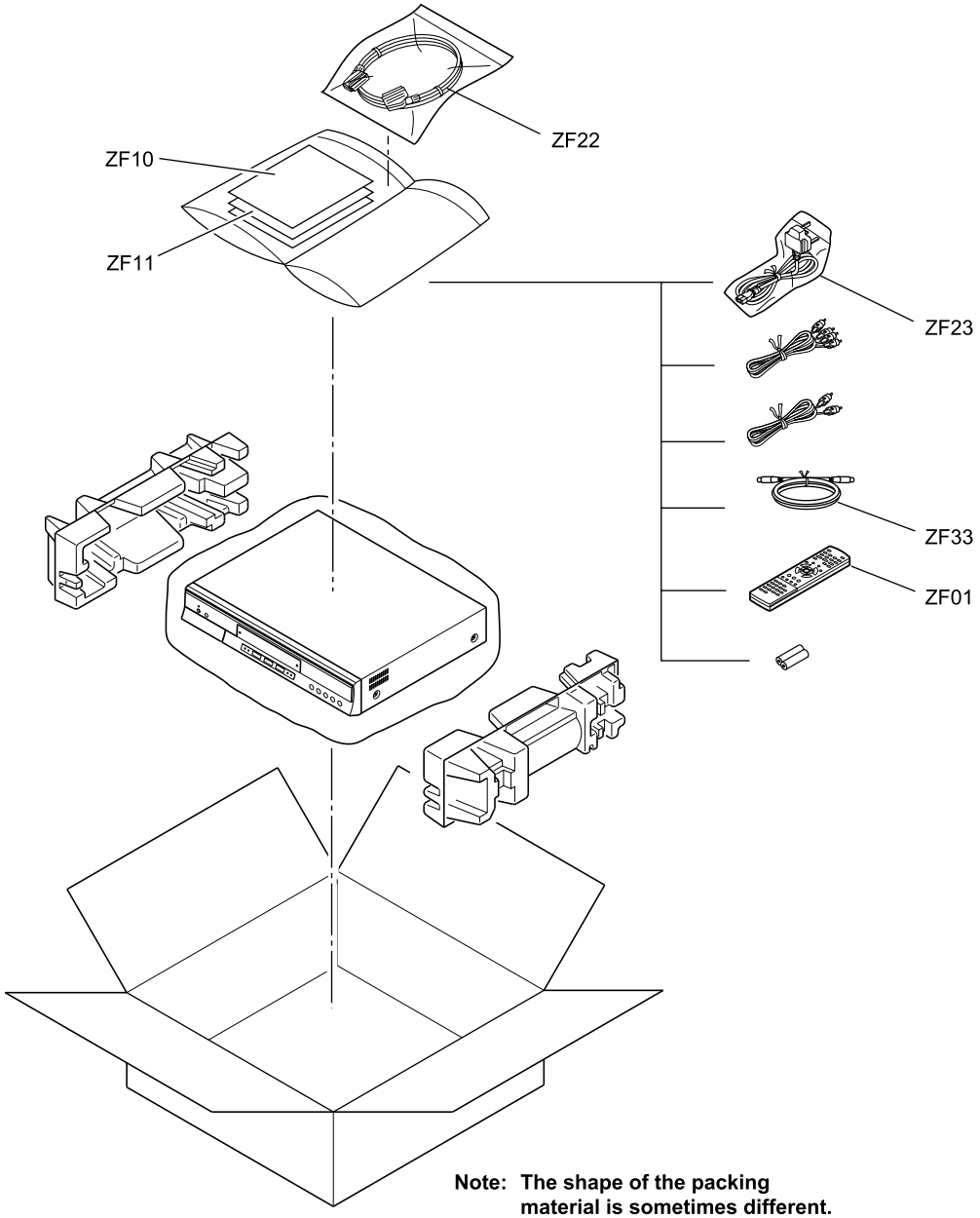
Table 4-3-1

Symbol	B	C	D	F	G	J	K	M
Tolerance %	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10	± 20

Ex. 470ΩJ = 470Ω± 5%

4. EXPLODED VIEWS

4-1. Packing Assembly



Note: The shape of the packing material is sometimes different.

Fig. 4-4-1

4-2. Chassis Assembly

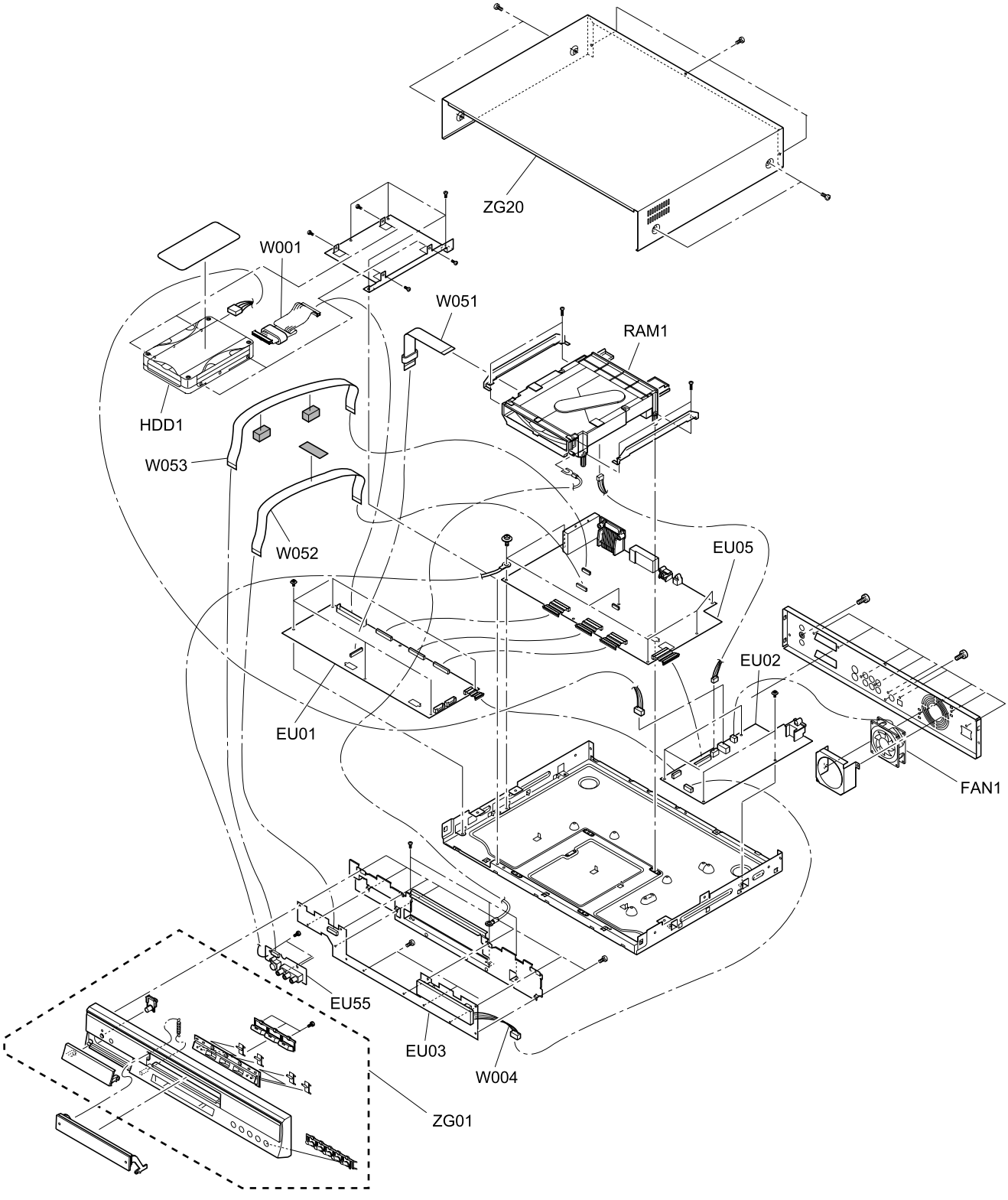


Fig. 4-4-2

5. PARTS LIST

Safety	Location No.	Part No.	Description
-MECHANICAL PARTS-			
	FAN1	P000377760	FAN, DC, D06T12TM25H1
	HDD1	P000377820	HDD
⚠	RAM1	P000377810	DVD-RAM
	W001	P000378120	CABLE, ATAPI, WIRE-40P-L140
	W004	P000378130	CABLE, LEADS, WIRE-7P-L150
	W051	P000377800	CABLE, FLEXIBLE, FFC-40P-L50
	W052	P000377790	CABLE, FLEXIBLE, FFC-17P-L270
	W053	P000377780	CABLE, FLEXIBLE, SEALD, FFC-13P-L300
	ZF01	P000378140	REMOCON HAND UNIT, WIRELESS, SE-R0082
⚠	ZF10	P000378150	OWNER'S MANUAL, ENGLISH, RD-XS30B-OP
⚠	ZF11	P000378160	OWNER'S MANUAL, ENGLISH, RD-XS30B-ST
	ZF22	P000378310	CABLE, 21PIN SCART
⚠	ZF23	79088034	CORD, POWER, H
	ZF33	P000378320	CABLE, U/V PAL
	ZG01	P000378170	PANEL ASSY, FRONT, SILVER
	ZG20	P000377770	COVER, TOP, SILVER

Safety	Location No.	Part No.	Description

-ELECTRICAL PARTS-

EU01	P000378070	PC BOARD ASSY, DIGITAL
IC202	P000378050	IC, SN74AHC1G04HDCKR
IC203	P000378050	IC, SN74AHC1G04HDCKR
IC204	P000378060	IC, LAN91C113I-NE
IC301	P000378050	IC, SN74AHC1G04HDCKR
IC302	79040388	IC, PQ070XZ01ZP
IC303	P000377920	IC, SN74LV244APWR
IC304	P000378200	IC, MT48LC1M16A1TG
IC305	P000378200	IC, MT48LC1M16A1TG
IC306	P000377920	IC, SN74LV244APWR
IC307	79040314	IC, TL750
IC309	P000378200	IC, MT48LC1M16A1TG
IC310	P000378200	IC, MT48LC1M16A1TG
IC311	79040386	IC, PST591KMT
IC313	79040164	IC, R5510H010C-T1
IC314	P000378200	IC, MT48LC1M16A1TG
IC315	P000378200	IC, MT48LC1M16A1TG
IC318	P000378200	IC, MT48LC1M16A1TG
IC319	79040243	IC, ZR36735
IC320	P000378050	IC, SN74AHC1G04HDCKR
IC321	79040388	IC, PQ070XZ01ZP
IC322	79040389	IC, UPD61052
IC323	P000378050	IC, SN74AHC1G04HDCKR
IC324	P000377920	IC, SN74LV244APWR
IC325	79040305	IC, HY57V641620HGT
IC326	79040305	IC, HY57V641620HGT
IC327	P000378050	IC, SN74AHC1G04HDCKR
IC328	79040390	IC, PQ1X331M2ZP
IC329	P000378000	IC, BR24C16F-E2
IC330	79040074	IC, TC74HC04AF-TP1
IC331	P000378010	IC, BE24C04F-WE2
IC332	P000378010	IC, BE24C04F-WE2
IC333	P000378020	IC, HD6417706
IC334	P000378030	IC, SN74LVC244APWR
IC336	79040388	IC, PQ070XZ01ZP
IC337	79040305	IC, HY57V641620HGT
IC338	79040391	IC, MBM29DL324BE-90TN
IC339	79040392	IC, HY57V281620HCT
IC340	P000378040	IC, SN74AHC1G08HDCKR
IC341	79040391	IC, MBM29DL324BE-90TN
IC342	79040392	IC, HY57V281620HCT
IC343	79040306	IC, PST594JMT
IC344	P000378040	IC, SN74AHC1G08HDCKR
IC345	79040388	IC, PQ070XZ01ZP
IC346	P000378210	IC, XC17S100XLS020C
IC347	P000378220	IC, XC2S100-5PQ208C
X300	79089168	OSCILLATOR, QUARTZ, CRYSTAL
X301	P000377990	OSCILLATOR, QUARTZ, CRYSTAL
X302	P000377980	OSCILLATOR, QUARTZ, CRYSTAL

Safety	Location No.	Part No.	Description
⚠	EU02	P000378080	PC BOARD ASSY, POWER SUPPLY 240V
	EU03	--------	PC BOARD ASSY, DISPLAY
	A101	P000377970	DISPLAY, FL, HNV-10SM23T
	BZ101	P000377950	BUZZER, PS1240P02AT
	D101	79060022	DIODE, 1SS368
	D102	79060022	DIODE, 1SS368
	D103	79060022	DIODE, 1SS368
	D111	79060091	LED, MVL-354B-T
	D112	79060077	LED, YELLOW, SLA-360MT
	D113	79060100	LED, RED, SLI-325URCT31
	D114	79060077	LED, YELLOW, SLA-360MT
	D115	79060077	LED, YELLOW, SLA-360MT
	D116	79060100	LED, RED, SLI-325URCT31
	D117	79060099	LED, ORANGE, SLI-325DCT31
	D118	79060033	LED, RED/GREEN, SPR-325MVWT31
	D121	79060022	DIODE, 1SS368
	D122	79060022	DIODE, 1SS368
	D123	79060022	DIODE, 1SS368
	D124	79060022	DIODE, 1SS368
	D125	79060022	DIODE, 1SS368
	D126	79060022	DIODE, 1SS368
	D127	79060022	DIODE, 1SS368
	D128	79060022	DIODE, 1SS368
	D129	79060022	DIODE, 1SS368
	D130	79060022	DIODE, 1SS368
	D131	79060022	DIODE, 1SS368
	D132	79060022	DIODE, 1SS368
	D133	79060022	DIODE, 1SS368
	D134	79060022	DIODE, 1SS368
	D135	79060022	DIODE, 1SS368
	IC101	P000377960	IC, BU2879AK
	IC102	79089172	IC, GP1UM281XK
	Q101	79050089	TRANSISTOR, CHIP, RN2401
	Q102	79050089	TRANSISTOR, CHIP, RN2401
	Q103	79050089	TRANSISTOR, CHIP, RN2401
	Q104	79050009	TRANSISTOR, CHIP, RN1401
	Q105	79050009	TRANSISTOR, CHIP, RN1401
	Q106	79050009	TRANSISTOR, CHIP, RN1401
	Q107	79050089	TRANSISTOR, CHIP, RN2401
	Q108	79050089	TRANSISTOR, CHIP, RN2401
	Q109	79050009	TRANSISTOR, CHIP, RN1401
	S101	79089173	SWITCH, TACT
	S102	P000377940	SWITCH, PUSH-LEVER
	S111	79089173	SWITCH, TACT
	S112	79089173	SWITCH, TACT
	S113	79089173	SWITCH, TACT
	S114	79089173	SWITCH, TACT
	S115	79089173	SWITCH, TACT
	S116	79089173	SWITCH, TACT
	S117	79089173	SWITCH, TACT
	S118	79089173	SWITCH, TACT

Safety	Location No.	Part No.	Description
	EU05	P000378100	PC BOARD ASSY, MOTHER
	D901	79060028	DIODE, CHIP, 1SS226
	D902	79060028	DIODE, CHIP, 1SS226
	DX01	79060028	DIODE, CHIP, 1SS226
	DX02	79060028	DIODE, CHIP, 1SS226
	DX03	79060028	DIODE, CHIP, 1SS226
	DX04	79060028	DIODE, CHIP, 1SS226
	DX05	79060028	DIODE, CHIP, 1SS226
	DX06	79060028	DIODE, CHIP, 1SS226
	DX07	79060028	DIODE, CHIP, 1SS226
	DX08	79060028	DIODE, CHIP, 1SS226
	DX09	79060028	DIODE, CHIP, 1SS226
	D903	79060019	DIODE, CHIP, 1SS355
	D904	79060019	DIODE, CHIP, 1SS355
	DA09	79060019	DIODE, CHIP, 1SS355
	DA10	79060098	DIODE, RB521S-30TE-61
	DA11	79060098	DIODE, RB521S-30TE-61
	DA12	79060098	DIODE, RB521S-30TE-61
	DA13	79060098	DIODE, RB521S-30TE-61
	DB01	79060096	DIODE, ZENER, MTZJT-7733D
	DB20	79060019	DIODE, CHIP, 1SS355
	DW02	79060028	DIODE, CHIP, 1SS226
	DW03	79060028	DIODE, CHIP, 1SS226
	DW04	79060028	DIODE, CHIP, 1SS226
	DW05	79060028	DIODE, CHIP, 1SS226
	DW06	79060028	DIODE, CHIP, 1SS226
	DW07	79060028	DIODE, CHIP, 1SS226
	DW08	79060028	DIODE, CHIP, 1SS226
	DW09	79060028	DIODE, CHIP, 1SS226
	DW10	79060028	DIODE, CHIP, 1SS226
	DW11	79060028	DIODE, CHIP, 1SS226
	DW12	79060028	DIODE, CHIP, 1SS226
	DW13	79060028	DIODE, CHIP, 1SS226
	DW14	79060019	DIODE, CHIP, 1SS355
	DW15	79060028	DIODE, CHIP, 1SS226
	DW16	79060019	DIODE, CHIP, 1SS355
	DW17	79060019	DIODE, CHIP, 1SS355
	DW18	79060019	DIODE, CHIP, 1SS355
	DW19	79060019	DIODE, CHIP, 1SS355
	IC700	P000378230	IC, UPD78F4225YGC-8BT
	IC701	79040380	IC, BD4722G-TR
	IC702	79040310	IC, IDT74FCT541ASO
	IC901	79040379	IC, NJM2870F05(TE1)
	ICA07	79040379	IC, NJM2870F05(TE1)
	ICA18	79040379	IC, NJM2870F05(TE1)
	ICA01	P000377930	IC, AK5365VQ
	ICA15	P000377920	IC, SN74LV244APWR
	ICA19	79040044	IC, NJM4580E
	ICA32	79040044	IC, NJM4580E
	ICA20	P000377910	IC, AD71025
	ICA21	79040074	IC, TC74HC04AF-TP1
	ICA24	79089024	TERMINAL, OPT, TOTX178
	ICB20	P000378240	IC, MSP3417G

Safety	Location No.	Part No.	Description
	ICB80	79040371	IC, BA7046F-E2
	ICB81	P000363370	IC, NJM2230MV(TE1)
	ICE00	P000378250	IC, SDA5650X
	ICW01	P000378260	IC, MM1506XNRE
	ICW02	P000378260	IC, MM1506XNRE
	ICW03	P000378260	IC, MM1506XNRE
	ICW04	P000378270	IC, MM1508XNRE
	ICW05	79040363	IC, MM1567AJBE
	ICW06	P000377900	IC, MM1563DFBE
	ICW07	79040139	IC, ADV7172
	ICW08	79040029	IC, TC74HC4053AF
	ICX01	79040381	IC, MM1503XNRE
	ICX04	79040381	IC, MM1503XNRE
	ICX05	79040382	IC, MM1140XFFE
	ICX06	79040369	IC, MM1113XFBE
	ICX07	79040379	IC, NJM2870F05(TE1)
	ICX08	79040374	IC, PQ05DZ1U
	ICX09	P000377890	IC, MM1501XNRE
	J902	79089100	JACK PLATE, DIGITAL AUDIO
	JX01	P000377880	JACK BOARD, S-CONNECTOR+6P
	JX03	P000378280	CONNECTOR, RGB, 21PIN
	Z902	P000377870	RELAY, G6S-2DC5V
⚠	MB01	P000378290	TUNER, TMDG2-840A
	Q700	79050043	TRANSISTOR, CHIP, RN1402
	Q901	79050043	TRANSISTOR, CHIP, RN1402
	QA03	79050043	TRANSISTOR, CHIP, RN1402
	QX01	79050043	TRANSISTOR, CHIP, RN1402
	QX04	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QX05	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QX06	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	Q910	79050043	TRANSISTOR, CHIP, RN1402
	Q911	79050043	TRANSISTOR, CHIP, RN1402
	Q902	79050001	TRANSISTOR, CHIP, RN2402
	Q903	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QA04	79050001	TRANSISTOR, CHIP, RN2402
	QA01	79050014	TRANSISTOR, CHIP, HN1C03F-B
	QA02	79050014	TRANSISTOR, CHIP, HN1C03F-B
	QA05	79050014	TRANSISTOR, CHIP, HN1C03F-B
	QA06	79050014	TRANSISTOR, CHIP, HN1C03F-B
	QX02	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QX03	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QB02	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QB21	79050017	TRANSISTOR, CHIP, 2SC2714-Y
	QB22	79050017	TRANSISTOR, CHIP, 2SC2714-Y
	QB60	79040374	IC, PQ05DZ1U
	QB61	79040374	IC, PQ05DZ1U
	QB82	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QB83	79050043	TRANSISTOR, CHIP, RN1402
	QB84	79050043	TRANSISTOR, CHIP, RN1402
	QE00	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW01	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW02	79050043	TRANSISTOR, CHIP, RN1402
	QW03	79050016	TRANSISTOR, CHIP, 2SC2712-Y

Safety	Location No.	Part No.	Description
	QW04	79050001	TRANSISTOR, CHIP, RN2402
	QW05	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW06	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW08	79050043	TRANSISTOR, CHIP, RN1402
	QW09	79050043	TRANSISTOR, CHIP, RN1402
	QW10	79050043	TRANSISTOR, CHIP, RN1402
	QW13	79050043	TRANSISTOR, CHIP, RN1402
	QW14	79050043	TRANSISTOR, CHIP, RN1402
	QW15	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW16	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW17	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW18	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW19	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW20	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW21	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW22	79050016	TRANSISTOR, CHIP, 2SC2712-Y
	QW23	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW24	79050043	TRANSISTOR, CHIP, RN1402
	QW25	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	QW26	79050018	TRANSISTOR, CHIP, 2SA1162-Y
	RT700	P000377860	THERMISTER, NTSA0XH103EE1A0
	XB20	P000378300	OSCILATOR, QUARTZ, CRYSTAL
	X700	P000377850	RESONATOR, CERAMIC, SMD
	X701	P000363400	OSCILATOR, QUARTZ, CRYSTAL
	EU55	--------	PC BOARD ASSY, JACK
	J101	P000377840	CONNECTOR, PIN-JACK
	J102	P000377830	CONNECTOR, S-JACK

SPECIFICATIONS

Power requirement during operation	40W
Power requirement at standby	3.7W or below (Eco mode: off) 2.3W or below (Eco mode: on)
Power supply	230-240V AC, 50/60 Hz
Mass	5.4kg
External dimension	Width 430 x Height 78 x Depth 350mm
Incoming channels	TV : 2-69CH, CATV : 1-125CH
Antenna input/output terminal	VHF/UHF : 75Ω, F Connector
Demodulation input/output terminal	0.67Vp-p (75Ω) Unbalanced, Pin jack
Bit stream input/output terminal	0.5Vp-p (75Ω) Unbalanced, Pin jack
Signal system	Standard PAL Colour TV system
Laser	Semiconductor laser, Wavelength : 650nm/780nm
Format	DVD video recording format DVD video format
Image recording system	MPEG2
Sound recording system	Dolby digital, Linear PCM
Disc for recording images	DVD-RAM disc (4.7GB for one side, 9.4GB for both sides) DVD-R disc (4.7GB for one side)
Internal HDD capacity	60GB
Tuner	System : Frequency synthesizer Channel coverage : PAL I VHF : A-J, 11, 13, E2-E12 UHF : E21-E69 CATV : X, Y, Z, S1-S41, 1-53 (48MHz to 464MHz, 8MHz steps) Stereo : NICAM-I
Image input	1.0Vp-p (75Ω), Synchronization negative, Pin jack x 2 systems, 1 at rear, 1 in front SCART socket x 1 at rear
Image output	1.0Vp-p (75Ω), Synchronization negative, Pin jack x 2 systems, 1 at rear SCART socket x 1 at rear
S Image input	(Y) 1.0Vp-p (75Ω), Synchronization negative, Mini DIN4 Pin x 3 systems (C) 0.286Vp-p (75Ω), 1 at rear, 1 in front SCART socket x 1 at rear
S Image output	(Y) 1.0Vp-p (75Ω), Synchronization negative, Mini DIN4 Pin x 2 systems (C) 0.286Vp-p (75Ω), 1 at rear SCART socket x 1 at rear
Sound input	2.0V (rms), 50kΩ or below, pin jack (L, R) x 3 systems 1 at rear, 1 in front SCART socket x 1 at rear
Sound output	2.0V (rms), 200Ω or above, pin jack (L, R) x 2 systems 1 at rear SCART socket x 1 at rear
Sound output (BITSTREAM/PCM optical terminal)	Optical connector x 1 system
Sound output (BITSTREAM/PCM coaxial terminal)	0.5Vp-p (75Ω), pin jack x 1 system
Remote control	Wireless remote control (SE-R0082)
Operating conditions	Temperature : 5°C–35°C, Position: Horizontal
Clock display	24 hour digital display
Clock accuracy	Quartz (monthly deviation : approximately ±30 seconds)

- The design and specifications may change without prior notice.
- The Illustrations and screens described in this manual may be exaggerated or simplified for easy recognition and may be slightly different from the actual unit.

Supplied Accessories

Remote control	1
Batteries (R03)	2
Power cord	1
Coaxial cable	1
Video cable	1
Audio cable	1
SCART cable	1

TOSHIBA CORPORATION
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